

# AIRFIX magazine

March 1975

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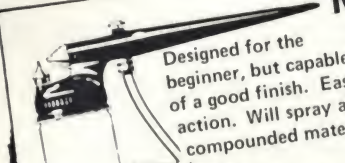
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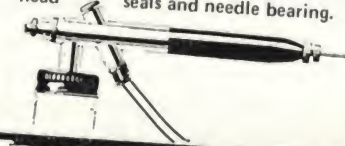
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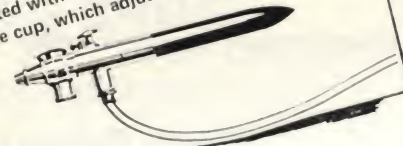
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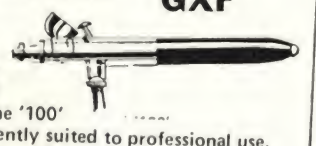
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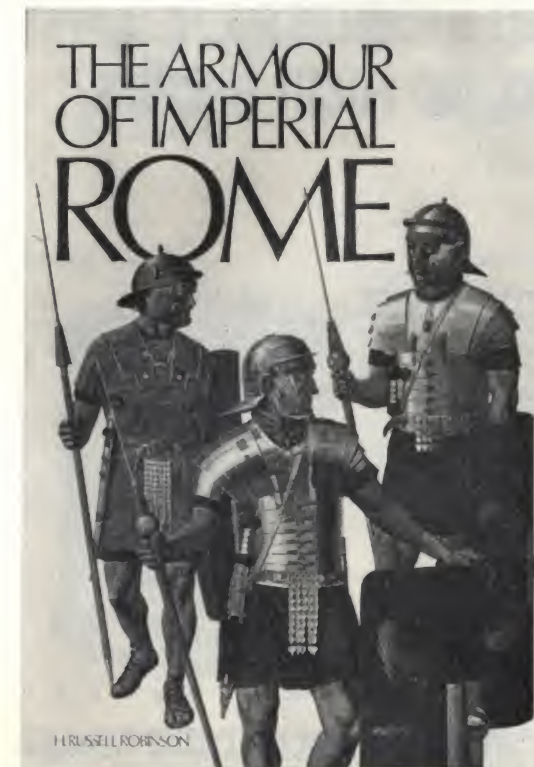
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# AIRFIX magazine

March 1975  
Volume 16 Number 7

## FOR PLASTIC MODELLERS

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### Cover Picture

The crew of a 111 Squadron Phantom prepare for a sortie in this attractive close-up supplied by the Ministry of Defence. Compare this photo with that of a 'Treble One' Lightning featured on the front cover of PSL's new edition of Michael Bowyer's famous book *Fighting Colours: RAF Fighter Camouflage and Markings, 1937-1975*.

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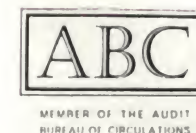
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(Productions) Ltd, Publishing  
Department, 136/142 New Kent Road  
London SE1  
Tel 01-703 5480

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Airfix Magazine is published for the proprietors, Airfix Products Limited, by PSL Publications Limited, on the fourth Friday of each month. Annual subscription rate £3.40 (USA \$8.75) from Surridge Dawson & Company (Productions) Limited. Second Class postage paid at New York Post Office, NY.



March 1975





## Peter F. Guiver in the air

### 67th Aerospace Rescue and Recovery Squadron

THE MAJORITY OF news items concerning the United States Air Force usually deal with such exotic record-breakers as the SR-71, the vast F-4 Phantom or F-111 Wings, or the weight-lifting feats of the C-5 Galaxy. However there are several other units that are less well known but which nevertheless perform many valuable roles.

One such unit is the 67th Aerospace Rescue and Recovery Squadron based at RAF Woodbridge, near Ipswich, Suffolk. This squadron moved to Britain in 1969 from Moron Air Base, Spain and now oper-

ates Lockheed HC-130 Hercules and Sikorsky HH-53 helicopters on search and rescue missions, under the Command of Lt Col Stanley G. Maratos.

The 67th has four main tasks, as follows: **Combat Rescue.** This provides an SAR service for US and NATO aircrew in war and peace. **Support NASA Manned Spaceflight Programme.** On all Apollo and Skylab missions the 67th was the prime recovery unit as the launch abort area was near the United Kingdom, and will also be patrolling off Lands End to cover the proposed joint

USA-USSR Apollo-Soyuz link-up mission, planned for mid-1975. **Assist any nation needing an SAR service.** Here the 67th's area of operations extends from Greenland to Burma, and from North to South Poles. **Provide humanitarian relief** to civilians in the event of natural disasters.

The 67th is part of Military Airlift Command and is controlled by the 39th Rescue Wing at Eglin Air Force Base, Florida. However, the unit can be called upon by several other organisations including the USAF 3rd Air Force; the Rescue Co-ordination Centre at Ramstein, Germany; the British Services, and can also initiate an operation if it feels justified.

To fulfil the various roles the 67th operates a fleet of three HC-130Hs, which are used for general search and rescue co-ordination; four HC-130Ns that have an additional tanker capability; and four HH-53Cs, the versatility of which can be greatly extended by in-flight re-fuelling.

The Hercules, which is powered by four Allison T-56-A-15 turboprops of 4,910 shp each, is capable of carrying a large amount of rescue equipment; for example, two 20-man liferafts complete with food, dry clothing, etc. The nose radome of the 'H' model still shows where the folding arms of the Fulton surface-to-air recovery system were fitted. By this method a person could be 'snatched' from the ground by a line held aloft by a balloon, but due to the longer range of modern helicopters this system is not now used.

The 'N' version is used as a tanker for the HH-53Cs and is fitted with two 1,800 gal fuel tanks in the fuselage in addition to the wing tanks mounted between the engines, outboard of which are located the nacelles housing the refuelling hose on its drum with



Three views of HC-130N 69-5820 of 67th ARRS. Basic overall colour is light grey, fuselage lettering black. Fuselage doors have a narrow yellow outline. Wingtips yellow. NASA radome matt black. Propellers dark grey with black hubs and yellow tips. Note letter 'F' missing in word 'Airlift' on lower fuselage.



Top two views of the starboard refuelling nacelle on 69-5820 with cover removed showing hose drum inside, with drogue under rear. Above left flare launchers under rear of Hercules by forward black band. Above right tail markings. Fuselage band is yellow with black edging. 'RESCUE' is white on a blue band with yellow edging. The serial is black on an off-white panel. Military Airlift Command badge has yellow wings and arrows, globe dark blue with white lines, shield glossy silver with yellow outline, title scroll yellow and white.

the drogue. This hose has a total length of 81 feet.

The other main modification to both Hercules models is the large radome above the nose which houses the sophisticated tracking equipment used in NASA Spaceflight recovery operations.

Fitted in the upward folding rear door are flare launchers for the instant marking of a newly found dinghy or other small object which could easily be lost again in poor weather conditions.

A crew of eight is usually carried consisting of pilot, co-pilot, navigator, flight engineer, radio-operator, loadmaster, and two para-rescue men (or 'PJs') who are highly trained parachutists capable of many rescue jobs in all types of terrains and conditions.

One Hercules, usually a tanker, is on rotational detachment to Keflavik, Iceland at all times to support rescue services in that area.

Turning now to the helicopter operated, this is the Sikorsky HH-53C (or 'Super Jolly Green Giant'), powered by two 3,435 shp General Electric T64-GE-7 turboshafts. This

is the largest helicopter used by the USAF, and stretcher cases can be handled with ease as the aircraft has a rear loading door and ramp similar to the Hercules.

The telescopic in-flight re-fuelling probe is mounted on the right-hand side of the nose, and, in addition, 450 gal or 650 gal fuel tanks can be fitted externally to the main undercarriage pods.

The hoist is over the forward starboard door and can lift up to 600 lb with a 240 foot

cable. The aircraft can climb on one engine up to 8,000 feet, and in an emergency can float for up to two hours. A crew of four is normally carried: pilot, co-pilot, flight engineer, and one 'PJ'.

For in-flight re-fuelling the port drogue position is the one primarily used, and after the helicopter has made contact it moves out to formate level with the wing of the

Continued on page 406



Nose detail of HC-130H 65-0976. Note shape of nose radome (see text); large window by door; '0976' panel black and yellow; NASA radome white in this case.



In the Western Desert battles of 1941-43 the Germans came near to victory due to the tactical skill of their commander, Field Marshall Erwin Rommel. Rommel frequently directed operations from just behind the front line, his armoured radio command car becoming a familiar sight to the German troops.

'Greif' (Strike), as he named the vehicle, was a standard SdKfz. 250/3 semi-tracked reconnaissance car.

The SdKfz.250 series of armoured vehicles was designed and built by the firm of Demag. The 250's carried a crew of six and a main armament of two heavy machine guns. With the 250/3 version, accommodation was reduced to four to make room for the radio equipment.

No less than 14 different models of the basic 250 were produced including supply and cable laying vehicles, anti-tank and self-propelled guns and observation cars. The engine had seven forward and three reverse gears giving it a respectable

cross-country speed of 37 mph.

The Airfix 'Greif' reproduces a multitude of accessories and fine detail flexible tracks.

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**Rommel's Half-Track**  
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Technical Details	
Date of origin:	1939
Make/Model:	Demag SdKfz 250/3
Engine:	6 cylinder 4.17 lit Maybach.
Top Speed:	37 mph (cross-country)
Fuel capacity:	31 gallons.
Range:	186 miles.
Armament:	Two heavy machine guns.

OUR HALF-TRACK IS ROMMEL'S GREIF.



The story of the Short Skyvan to date is one of reliability, ruggedness and steady sales. 105 Skyvans had been sold, by December 1974, to more than 35 operators and the type seems assured of further orders.

The prototype Skyvan made its first flight in January 1963. The Skyvan is purely functional in design, ugly in appearance, and hence affectionately known as the 'five ton budgie'.

Its large cabin can carry up to 19 passengers plus baggage or 5,000 lbs of freight. Olympic Airways operated two Skyvans on tourist services to and from the Greek islands. And amongst the eleven countries who use Skyvans for military purposes, the British-assisted Sultan of Oman's Air Force have put the Skyvan through its greatest test, averaging 2,000 sorties per month in temperatures of 125°F.

The Skyvan has carried loads as varied as goats and sheep, medical supplies, long-wheelbase Landrovers, and soldiers. Alternative markings are

provided for a Skyvan in the SOAF livery or Olympic Airways and Airfix have put their customary attention to detail into producing this new addition to their own model airforce.

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**Short Skyvan**  
**72nd Scale Series 4.**  
**New to the world's biggest range**  
**of construction kits.**

Technical Details	
Date of origin:	1963.
Engine:	Garrett-Air Research 715s.h.p.
Top Speed:	201 mph.
Service Ceiling:	10,000 ft.
Range:	306 miles (with 4,000 lb payload).
Wingspan:	64 ft. 11"
Length:	40 ft. 1"
Height:	15 ft. 1"

FIVE TON BUDGIE GOING CHEAP.







#### Continued from page 403

tanker. Transfer then takes place, cruising at approximately 110 knots, and the helicopter must keep its correct distance from the tanker within a tolerance range of 20

feet, otherwise the fuel flow will automatically shut off.

Employing the unique combination of helicopter and in-flight re-fuelling, the 67th thus provides a valuable service to both military personnel and civilians alike.

In conclusion I would like to thank the Commander of the 67th; the Information Officer, Lt Walter L. Reese; and the other personnel of the 67th for their valuable help during my visit to the squadron in the preparation of this article. □

**Above** front view of HH-53C 31647, fitted with 650 gal external tanks. Colours are standard USAF tactical camouflage of very dark green, green and sandy brown. **Below left** engine air intake filter, known as the Engine Air Particle Separator. Intake warning 'V' is red. **Below right** HH-53C tail markings: 'USAF' and serial are sandy brown, warnings are black, arrow red. **Bottom left** 650 gal tank mounted on undercarriage pod of HH-53C. Underside of main fuselage (but not rear door and ramp) is light grey. **Bottom right** HH-53C telescopic in-flight refuelling probe.



## Modelling the Fox armoured car

Using parts from the new Airfix 1:76 scale Scorpion kit by Dick Steeds

DEVELOPED BY Daimlers, the 'Fox' CVR (W) (Combat Vehicle Reconnaissance, Wheeled) was accepted for production in July 1970 by the British Army. The production order was, however, undertaken by the Royal Ordnance Factory at Leeds.

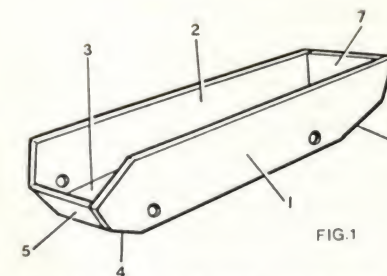
Hull and turret are constructed in light alloy armour which adds to the vehicle's performance and means that a greater weight of equipment can be carried.

The Fox carries a crew of three: driver, gunner/operator and commander/loader. It is powered by the Jaguar 'XK' 4.2 litre (militarised) engine. Fuel capacity is approximately 32 gallons (145.47 litres) carried under armour, plus 8½ gallons (38.65 litres) stowed externally in two jerricans.

Armament consists of the 30mm Rarden cannon and 7.62mm General Purpose Machine-Gun, and smoke dischargers are also carried. The vehicle is air transportable, three can be carried in a Hercules C Mark I aircraft, while two vehicles per aircraft can be parachute dropped on a specially designed platform and parachute equipment.

Construction of this model requires the modeller's tools mentioned in previous articles, plus 10, 20, 40 and 60 thou plastic card, Slater's Plastic Rod and 3mm/½in balsa wood; the new Airfix Scorpion kit, plus a Matador kit for wheels. For my model I used two sets of Thorneycroft Amazon front wheels, parts 90-93 from the Airfix Recovery set, found in my 'bits box'.

Study the template plan and trace the parts on to approximate thickness plastic



card. First drill axle holes in hull sides (1 and 2), and assemble the lower hull as shown in Fig 1 (parts 1-7). The holes should be drilled to fit the largest diameter plastic rod.

As in Fig 2 construct upper hull (8-15) and then cement completed upper and lower hull assemblies together.

Details 16-27 are added to the front of the hull, then near and offside details (28-49) added below the hull top (Figs 3 and 4). Remember to cut holes in parts 28 and 29 before assembly. I found scoring a circle with an old pair of dividers gave me a clean circle to carefully press out. A pair of kit hub caps cemented on the inside give a representation of covers, or alternatively these can be built up from plastic card.

Axles (50-51) were inserted through the axle holes and wheels cemented on to the

Fox on trials in Dorset (MoD).





ends of the axles.

The main superstructure on the hull consists of a balsa wood former with parts 52-61 cemented around and to the top of the former marked A in the accompanying photograph (Fig 3).

The turret base (62) was cut from 40-thou card using the divider method, or two pieces of 20 thou card (62 and 63) cemented together and sanded to a smooth circle. Alternatively your 'bits box' may provide a ready-made circle. A plastic rod peg (64) was cemented into the centre of the circle.

Louvre details at the rear of the hull body top (65-66) are cemented to the rear of the hull superstructure. The rear body top is completed with parts 62-77.

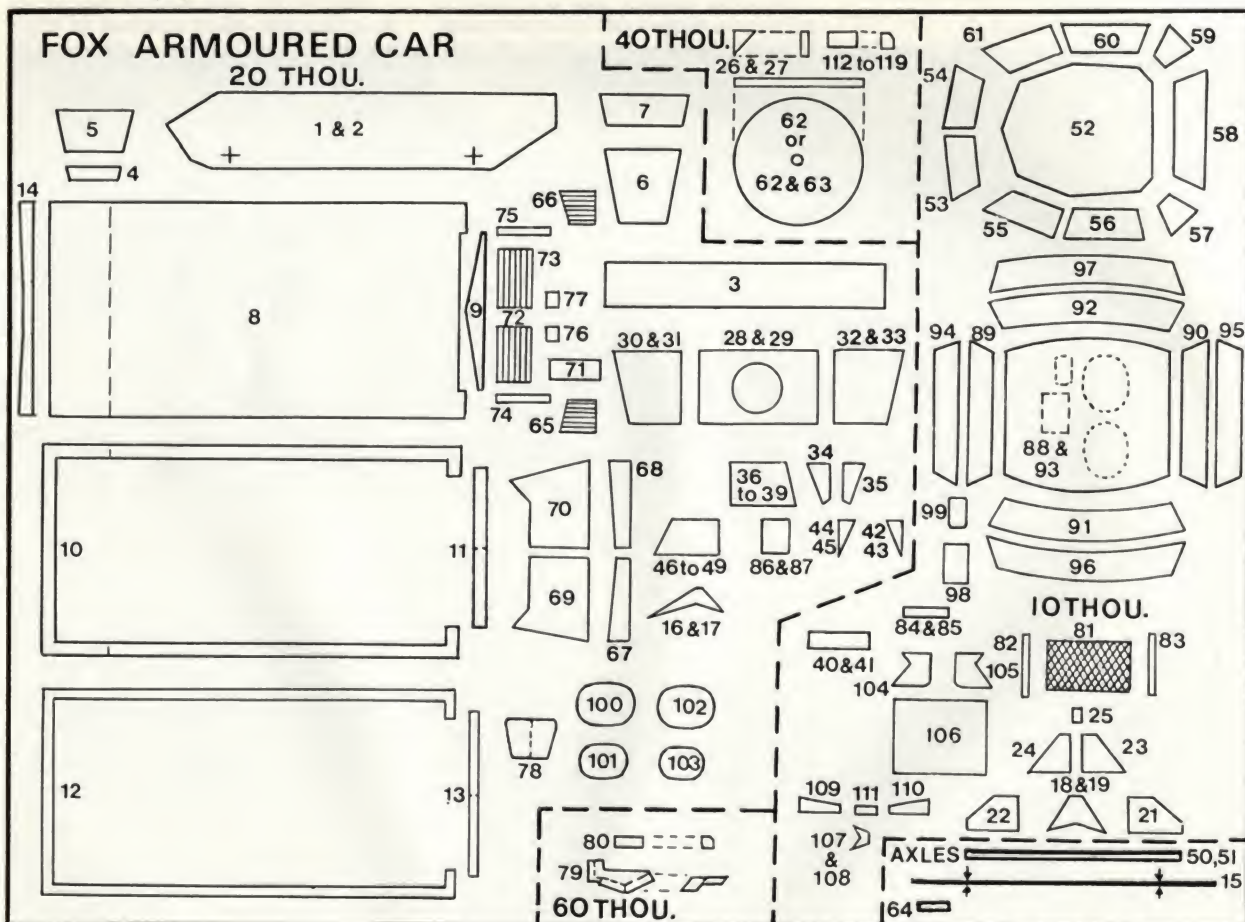
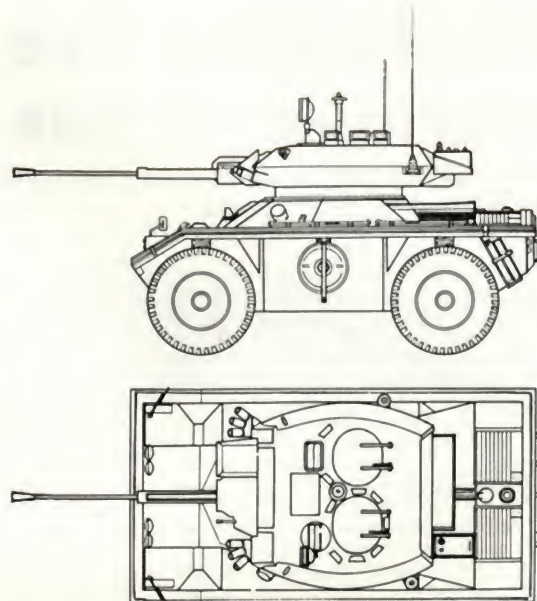
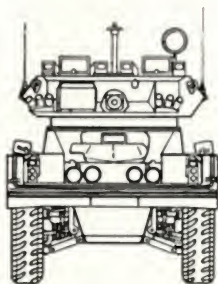
The driver's compartment components (78-80) are cemented to the front of the turret superstructure, and rear components (81-83) cemented to the rear of the body.

Turret construction is shown in Fig 5, B and C being balsa wood formers 3mm deep, each half cemented together and parts 88-97 cemented to top, bottom and sides to complete the basic turret shape. If the turret hatch is required in the open position, cut an opening larger than the hatch cover in part B before commencing construction.

Check the position of the turret on the

Continued on page 410

Fox armoured car  
1:76 scale



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# Continued from page 408

turret base and drill a hole to accept peg 64, ensuring a fairly tight fit. Turret top details are now added, Airfix Scorpion/Scimitar kit parts 6-9 (Harden gun, mantlet, and night sight), 13, 14 (smoke dischargers), 23 (radar mast, nuclear fallout detector), and 22 (searchlight). Part 18 (hatch cover) could also be used or otherwise construct hatch covers, as template parts 100-103. Parts 98 and 99 are also cemented to the turret top in the position indicated by dotted lines.

Periscopes (112-119) are positioned as in the 3-view drawing. Turret rear details (104-106 and 108 to 111) are now cemented to the rear of the turret. The battery can be made from a plastic block. I utilised the sump from the Recovery Set transmission, part 71, cut to size.

I would like to thank the Ministry of Defence for their help in preparing this article. Keen modellers will want to add many of the details, turret hinges, petrol cans, towing hooks, aerial masts, etc, shown in photographs of the actual vehicle. I would also recommend Profile No 44 as a valuable source of information. □

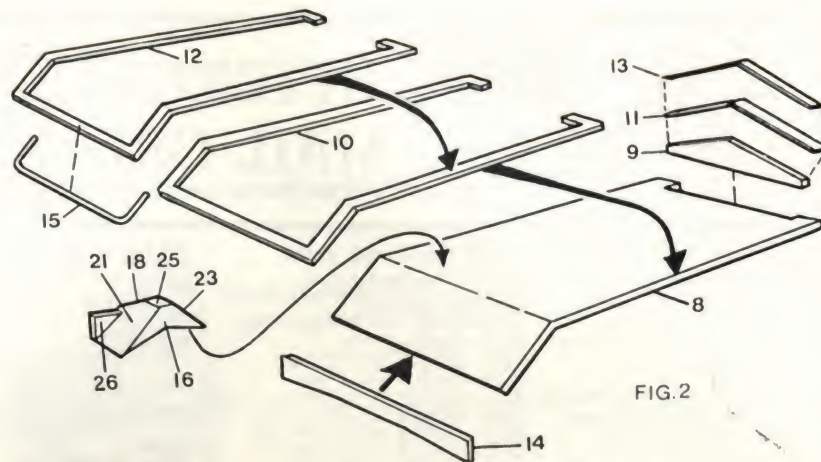


FIG. 2

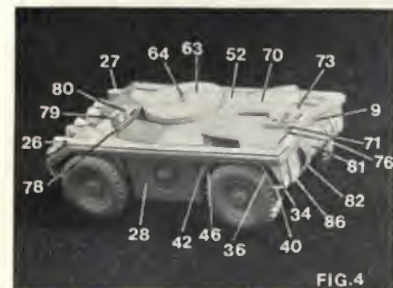


FIG. 4

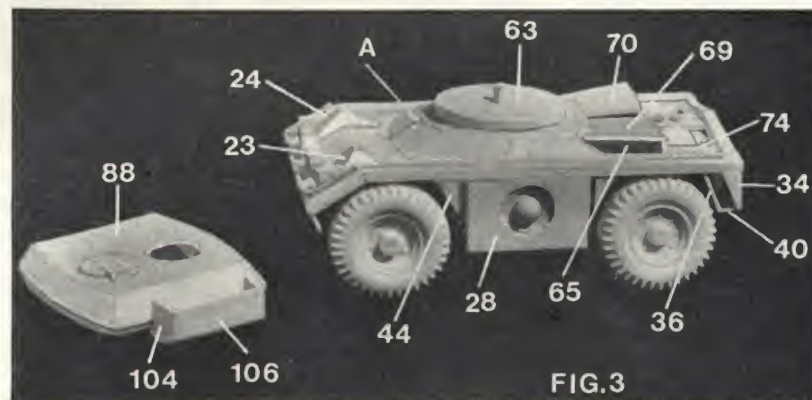


FIG. 3

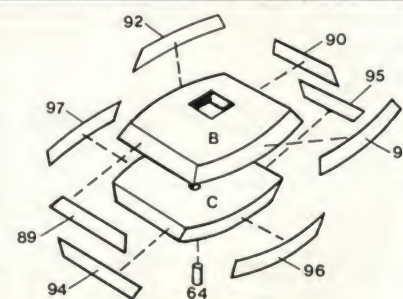
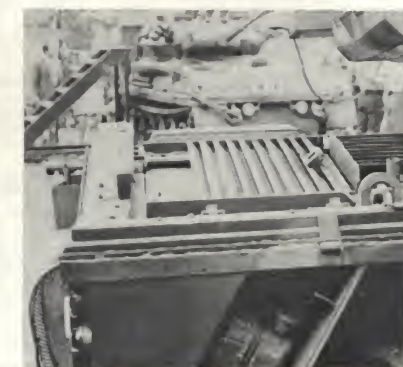
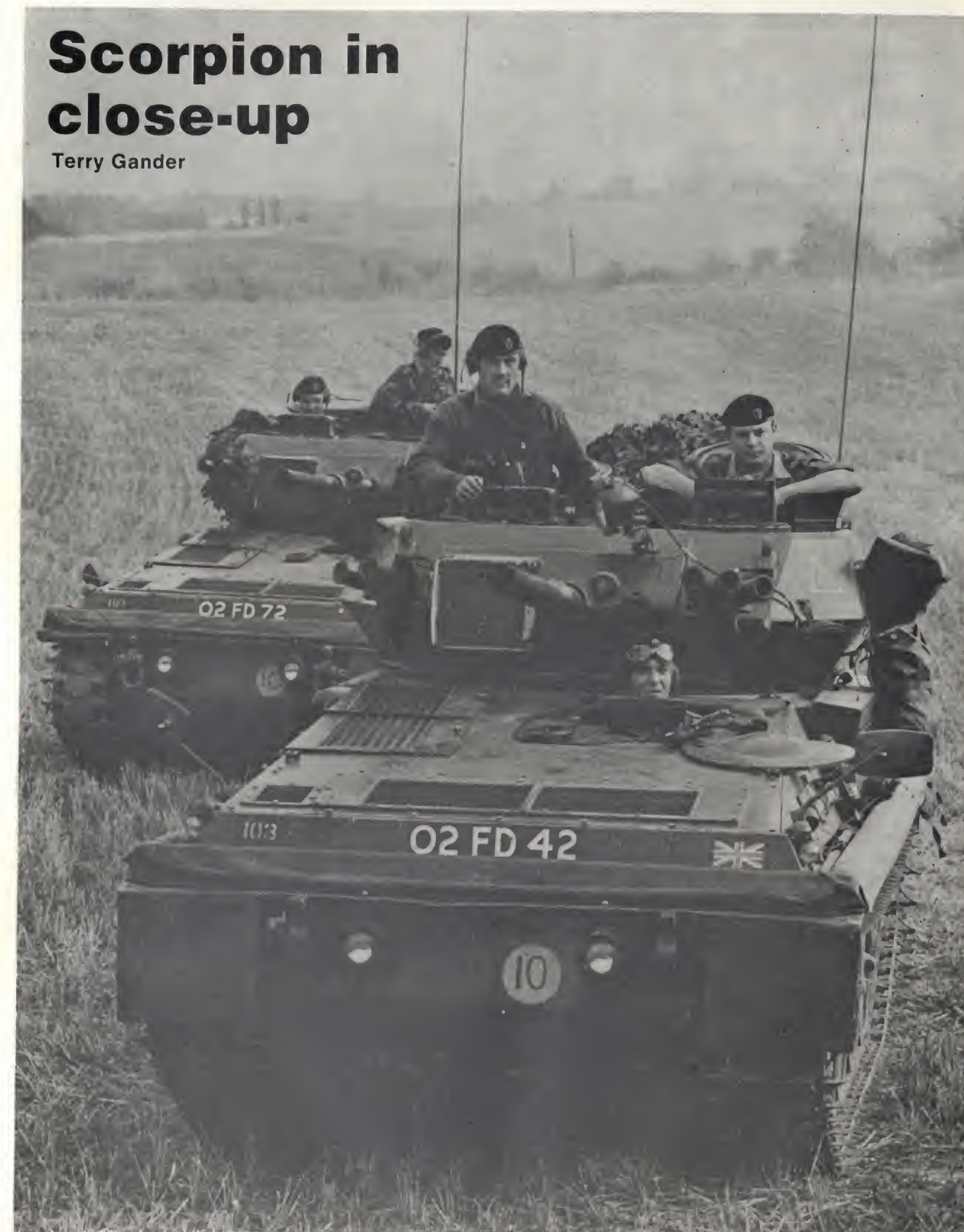


FIG. 5



## Scorpion in close-up

Terry Gander







WITH THE ADVENT of the Airfix Scorpion kit, modellers now have the basis for a wide and varied range of possible kit conversions and detailing projects. The Scorpion is one AFV that has not only many applications in the British Army but is also used in many Arab States and has also been ordered by Belgium. Fortunately, it is one vehicle for which information and reference sources are readily available.

For many in the UK, the Scorpion can often be seen at displays, but the political climate also means that it is often seen in newsreels relating to such topics as the Heathrow security operations. The photographs with this article were taken mainly at the Aldershot displays but they could just have well been taken at some air shows, for the Army is very fond of using the Scorpion for recruiting purposes on any occasion that might arise.

For detailed information on one of the many development vehicles, the place to go is the Tank Museum at Bovington. Although it is in rather a gloomy spot, close inspection of the early vehicle on show there will be of considerable assistance to anyone wanting to build a Scorpion model that is out of the ordinary.

For a very useful reference work, you could hardly do better than refer to AFV Profile No 34 which relates to all the Scorpion development projects and also to some of the variants.

A useful reference which many already have is the *Airfix Magazine* 'In the Field' column for December 1974 which has some good manufacturer's photographs of the Scorpion variants along with a table of dimensions.

The pictures with this article may help those without access to an actual vehicle to provide that extra measure of detail to their models of what is one of the more important AFVs in the British Army's inventory. □

**Previous page** Scorpions of the 14th/20th King's Hussars in the Harz Mountains of West Germany during the first major BAOR exercise in which Scorpions participated in October 1973 (MoD). **Above** Scorpion and Ferrets of 'A' Squadron The Blues and Royals during a multi-nation exercise in northern Greece during the summer of 1973 (UKLF). **Below** snow-camouflaged Scorpion from the Military Vehicle Experimental Establishment (MVEE) during vehicle trials in Norway (UKLF). **More photos on page 414.**



The F-15 Eagle, described as the "best, most manoeuvrable fighter ever built" is the first pure air superiority fighter to be developed for the USAF since the F-86 Sabre of 1948. High performing, heavily-armed, agile enough to perform 5g turns which would rip most aircraft to pieces, the F-15 has been designed to fulfil one specialist role: to rule the skies during the late seventies and early eighties. In simple terms, a dogfighter.



First requirement for a new air superiority fighter came from the USAF in 1965. Known first as the FX project, McDonnell-Douglas won the formal design competition and Pratt and Whitney the contract for the turbofan power units. Air superiority requires a combination of performance, avionics and weaponry, and McDonnell-Douglas made some 500 design studies of features for the aircraft. High speed agility was of prime importance. The need to save on weight, cost and complexity ruled out a variable-geometry layout, but twin engines were adopted for survivability. Multiple control systems will keep the F-15 fighting in the face of battle damage, and the engine is module-built to allow for rapid repair. Off-the-shelf avionics have been used wherever possible, and flying controls have been kept simple.

Main weapon for the F-15A is a General Electric 20mm Gatling gun mounted in the right hand wing root. The new Philco-Ford 25mm gun - 6,000 rounds per minute! - will be fitted to the second Air Force wing. Missile armament is a mix of 8 Sidewinders and Sparrows and the Navy's new Agile may be adopted later. Just as important as

the impressive array of weaponry itself is the Hughes APG-63 "dogfighting" attack radar which gives the pilot a continual flow of information and calculations for air-to-air combat.

The USAF has made some proud claims for the F-15. They say it will out-climb, out-maneuvre and out-accelerate any MiG now or in the next decade. In simulation exercises against a MiG-25 Foxbat the Eagle has proven superiority with either gun or missiles. Even assuming that Soviet missile technology is further advanced, the F-15's manoeuvrability will still give it a clearly-defined edge.

The Eagle made its first flight at Edwards Air Force Base on July 27th 1972 and by the end of 1973 eleven were involved in test flight studies. Fully operational deployment should be attained during 1976. The Eagle, with its smooth flat surface area painted "air superiority blue" looks every inch a lethal weapon. The dogfighter has returned.

Revell's superbly detailed 1/72nd scale F-15 Eagle Kit makes the most of this stunning new dogfighter. The finished model stands over 10 1/2" long with a wing span of over 7". Full-realism details include removable Pratt & Whitney Turbofan engine. Opening clear canopy reveals cockpit instrument panel, control stick, pedals and ejection seat. To complete the kit optional position landing gear with movable wheels, speed brake, four sparrow missiles and full colour USAF markings. Add the Eagle's air superiority to your collection.

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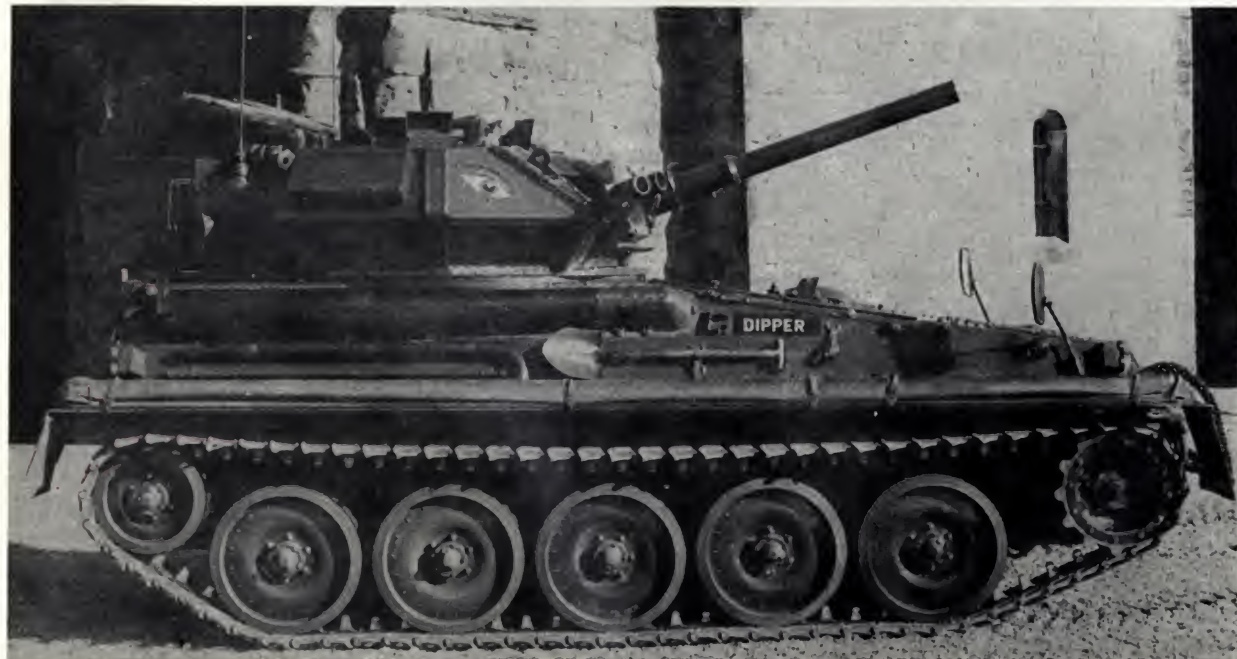
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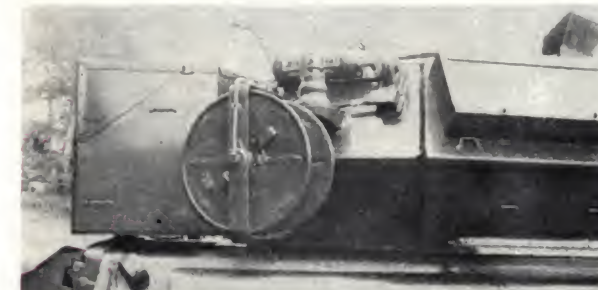




**Top left** the main 76 mm armament of the Scorpion. On this demonstration vehicle the infra-red searchlight mounting has been removed and its place taken by a blanking plate. The joint between the barrel and the mantlet has been sealed by a canvas cover. For an extra bit of 'bull', the tampon sealing the bore has been adorned with the RAC badge. **Top right** close-up of the Rarden mantlet on the Scimitar variant. **Above left and right** two rear views of a Scorpion showing the large stowage bin which was not fitted to early vehicles but has been added in the light of service experience. Items to note are the prominent wading wall covers and towing bracket. **Below** Scorpion of the 4th RTR carrying the regiment's 'Chinese Eye' symbol on the turret (MoD).



**Above** RAF Hercules aircraft fly in Scorpions of 'A' Squadron the 16th/5th Lancers from the UK to the British base at Dhekelia in Cyprus, July 1974 (UKLF ex BFPO 53 PR). **Below left** Scorpion right-hand turret rear detail. **Below right** another view of the Rarden mantlet. Also visible are the driver's hatch and periscope, and the smoke dischargers. **Bottom left** close-up of the Scimitar mudguards. **Bottom right** many Scorpions and Scimitars are fitted with an extra stowage box on the hull lower rear. Some are made of sheet steel as in this rain-soaked example, but others have been seen made from wire netting. These bins are used to carry buckets, bits, covers and all the other impedimenta needed by a tank in service.





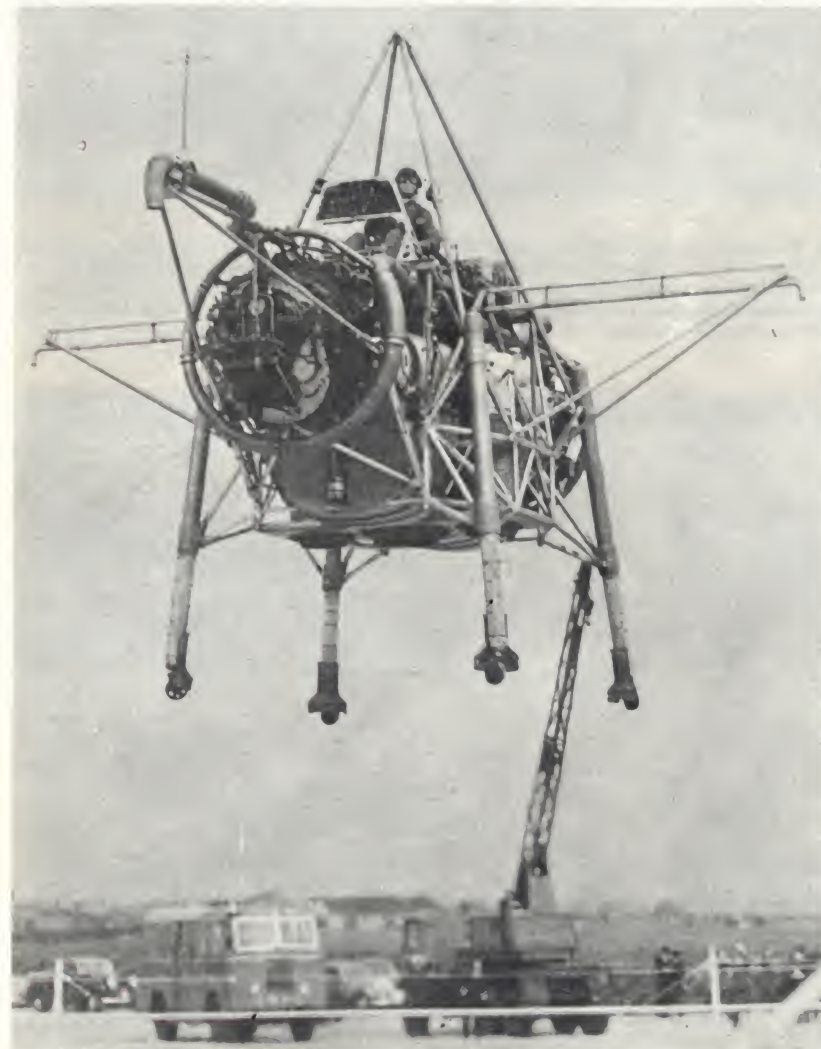
# Rolls-Royce Flying Bedstead

Scratch-built model with a difference described by R. W. Liddiard

ON JULY 3 1953, the world was treated to its first glimpse of what must surely be one of the most bizarre flying machines in the history of aviation.

The place was the Rolls-Royce plant at Hucknall, and the occasion was the roll-out of the 'Jet Control Research Unit', a VTOL machine soon to be dubbed 'Flying Bedstead' — a name by no means belied by its appearance!

*Flying Bedstead during one of the free flights from Hucknall (Rolls-Royce photo).*



## Description

The 3½ ton rig consisted of two Rolls-Royce Nene centrifugal turbojet engines mounted horizontally and back-to-back, exhausting downwards through trunking. The front engine exhaust was split into two pipes, one on either side of the single larger pipe of the aft engine. This method was adopted to eliminate an out of balance condition in the event of a failure of one or other of the engines.

Beneath the horizontal sections of the exhaust trunking were the two fuel tanks, the

whole structure being encaged by numerous struts. Above the exhaust trunking was a platform on which was mounted the pilot's non-ejectable seat, flying controls and instruments. Above this platform was a pyramid of four struts designed as a crash pylon.

Four pipes projecting fore and aft and port and starboard gave control by means of air ducted from the engine compressors in much the same way as the reaction control valves in the extremities of the Harrier, the port and starboard pipes controlling the roll axis, the fore and aft pipes the pitch axis. The latter pipes could also be swivelled about their longitudinal axes to give yaw (turning) control.

The undercarriage consisted of four tubular legs, one at each corner, with a small metal wheel at their bottom ends.

## History

Shortly after its roll-out, the prototype rig, XJ314, made its first tethered hover in a test gantry. On August 3 1954 the first free hover was made, an important milestone in the story of VTOL flight. XJ314 completed 16 free hovers at Hucknall, the last being on December 15 1954, and after an overhaul it was despatched to RAE Farnborough to continue research work till June 1956. After Farnborough XJ314 carried on its work at RAE Bedford until it was severely damaged in a non-fatal accident on September 16 1957.

Meanwhile, a second rig, XK426, was completed and rolled-out on August 19 1955 and completed its first tethered and free hovers on October 17 1955 and November 12 1956 respectively. This rig was involved in a fatal crash at Hucknall on November 28 1957 following loss of height control.

XJ314 was rebuilt using parts from XK426 for display in the Science Museum, London.

Altogether the two Flying Bedsteads completed 380 tethered and 120 free flights up to a height of 25 feet.

## Modelling the Flying Bedstead

The model is entirely scratch-built, no parts coming from other kits, apart from the pilot. As such it is not a model for a beginner to attempt, though someone just branching into scratch-building will find this an intriguing and challenging subject. The end result is a pleasing and unusual model, and fully justifies the amount of work involved. In the interests of simplicity and strength, authenticity has been sacrificed on a few minor points, my main aim being to capture the essential character of the rig.

If your sprue stretching technique (in both thick and thin sections) leaves something to be desired, a supply of plastic rod of various sizes is desirable, as is a knowledge of simple moulding. Tweezers, a sharp knife, and a supply of Mek-Pak are essential. On the subject of Mek-Pak cement; many of the strut joints suffer in appearance if normal tube cement is used, whilst Mek-Pak doesn't give enough strength. A technique I find useful is to use a 'pallet' of polystyrene plastic, about two inches square and fairly thick, say 60

Continued on page 418

AIRFIX magazine



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# Continued from page 416

thou. Using a paint brush, work the Mek-Pak into the pallet, until the plastic starts to dissolve. This occurs very rapidly, and supplies a pool of molten plastic to be used as cement. Needless to say, the resultant joint is very strong being analogous to a weld in metalwork. The pallet (and the joint) dry out very quickly, only as long as it takes for the Mek-Pak to evaporate. However, the pallet supply is soon reconstituted by adding another brushful of Mek-Pak. The more you add, the closer to a liquid it becomes. I used this technique exclusively on the model, and in spite of its frail appearance, it is one of the most rugged I ever produced, since the joints are every bit as strong as the plastic itself.

The first parts produced are the engines. The basic component parts are shown in Fig 2. Parts for each engine are as follows:

- Part a, compressor housing, 2 off.
- Part b, combustion chamber support, 1 off.
- Part c, turbine housing, 1 off.
- Part d, combustion chamber, 9 off.
- Part e, elbow connection, 9 off.

Part 'a' is produced by moulding (though it can be made solid). A wooden dolly, shaped as dictated by Fig 1, is pressed through a piece of heated 20 thou plastic pinned over a suitable diameter hole cut in a piece of thin wood. The two components are identical in all respects, though the after part is barely visible, being surrounded by combustion chambers. The sloping faces are surrounded by mesh 'window' air intakes. These are best painted on in a dark colour to contrast with the base colour of the housing which is silver on the sloping faces and black on the parallel faces.

Incidentally, silver is used extensively in this model, but it is a good idea to vary the shades used to represent dissimilar metals.

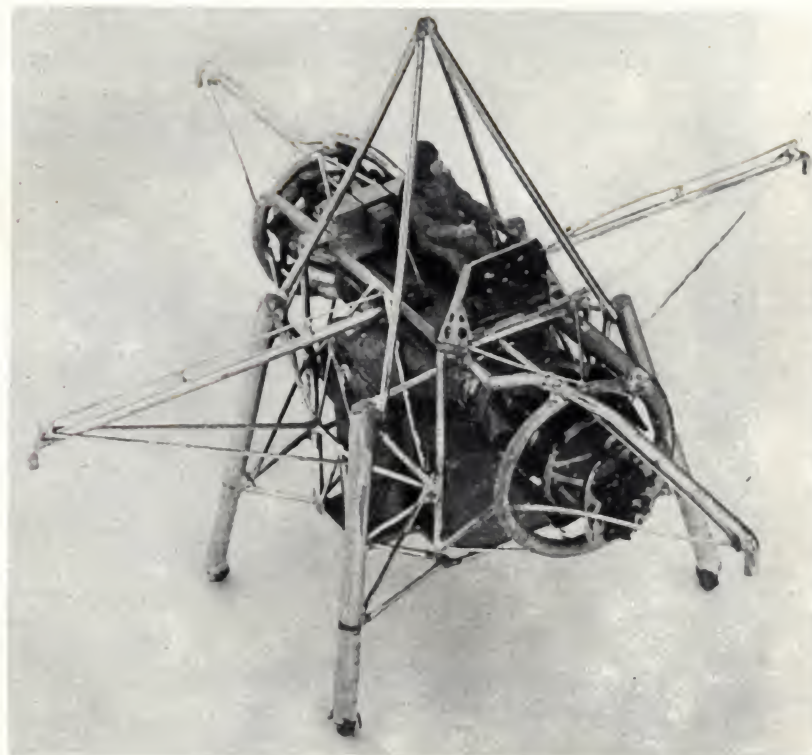
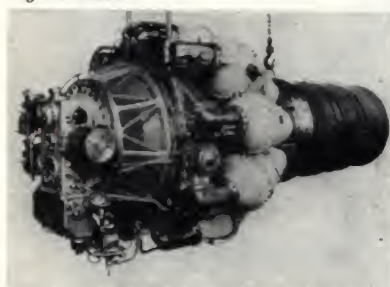
Part 'b' is simply made by rolling a strip of 10 thou card round a pencil or similar object and glueing an overlap. The true shape of this component is a chopped off cone, it's not worth the added complication of realism.

Part 'c', nothing more than a thick plastic disc.

Part 'd', of which nine are required for each engine, are cut from suitable plastic sprue, and filed to shape. This is probably the most tedious part of the job since eighteen identical components are required.

The chambers are evenly spaced around part 'a' at 40° intervals, starting at the 12 o'clock position. The thickest portion of the

A close-up shot of one of the Rolls-Royce Nene turbojets, two of which power the 'Flying Bedstead'.



The author's completed scratch-built model of the 'Flying Bedstead'. The pilot figure came from a Jaguar kit.

chamber is fixed at approximately the rear end of the taper on the after part 'a', the back end of the chambers butting on to the front face of part 'c'. The front of the chambers are painted black, up to the thickest portion. The rear part is a very light, almost white silver.

Part 'e', again nine of which are required, are right-angled pieces cut from 60 thou card. Although of square section, they must merge with the round inlet to the combustion chamber. This is achieved by building up the joint with molten plastic taken from the 'pallet' already mentioned. The front end of the right-angled part 'e' joins the parallel section of part 'a' tangentially, and viewed from the front, points in an anti-clockwise direction. These parts are painted black.

On the front face of part 'a' is a heavy plate, with parallel sides and semi-circular ends, the bottom portion of which slopes back slightly (See Fig 1). This is made from 30 thou card. On the front of it are mounted various engine accessories, represented on my model by small blocks of thick card and sections of rod, cut to various lengths. These accessories are painted black, with a few random details picked out in white and silver to represent pipes, junctions etc.

By the time I'd completed these engines, I was so pleased with them that I was tempted to try mounting one in a Sea Hawk or Attacker. I didn't, but it certainly opens up possibilities. I think a 1:72 Nene Lancastrian with its two Merlins and two Nenes exposed would take some beating.

However, back to the job in hand.

The next item on the agenda is the exhaust trunking. This is the main structure in the model, so it is important to get it right. Refer to Figs 1 and 3. The trunking for the front pipe is, as already mentioned, split into two. The piping is constructed from tubing made from 10 thou card rolled around a suitable dowel, overlapped at the seam, and very securely cemented. This is most important as it would be rather annoying to have a piece unfold when the framework has been built around them.

When the seam has set thoroughly, merge the overlap into the pipe circumference by light filing. Two diameters are required, the larger for the front end of the split trunking and all of the after engine trunking, and the smaller for the remainder of the forward engine trunking. Fig 3, 'c' and 'd', show the component parts of the forward engine ducting.

A certain amount of dexterity is required to fit the two angled, smaller diameter pieces neatly to the larger diameter forward part of the exhaust. Filling with brushloads of molten plastic assists greatly here.

The bottom ends of the pipes protrude through a baseplate of 40 thou card (Fig 4), and on the underside are surrounded by flanges. The resultant protrusions look like small paint tin lids with the centres removed. Referring to Fig 3 again, part 'b' must be very securely joined in the angle of part 'a'. The trunking is silver in colour with dark bands to indicate welds. The baseplate I painted grey, top and bottom; and the 'small

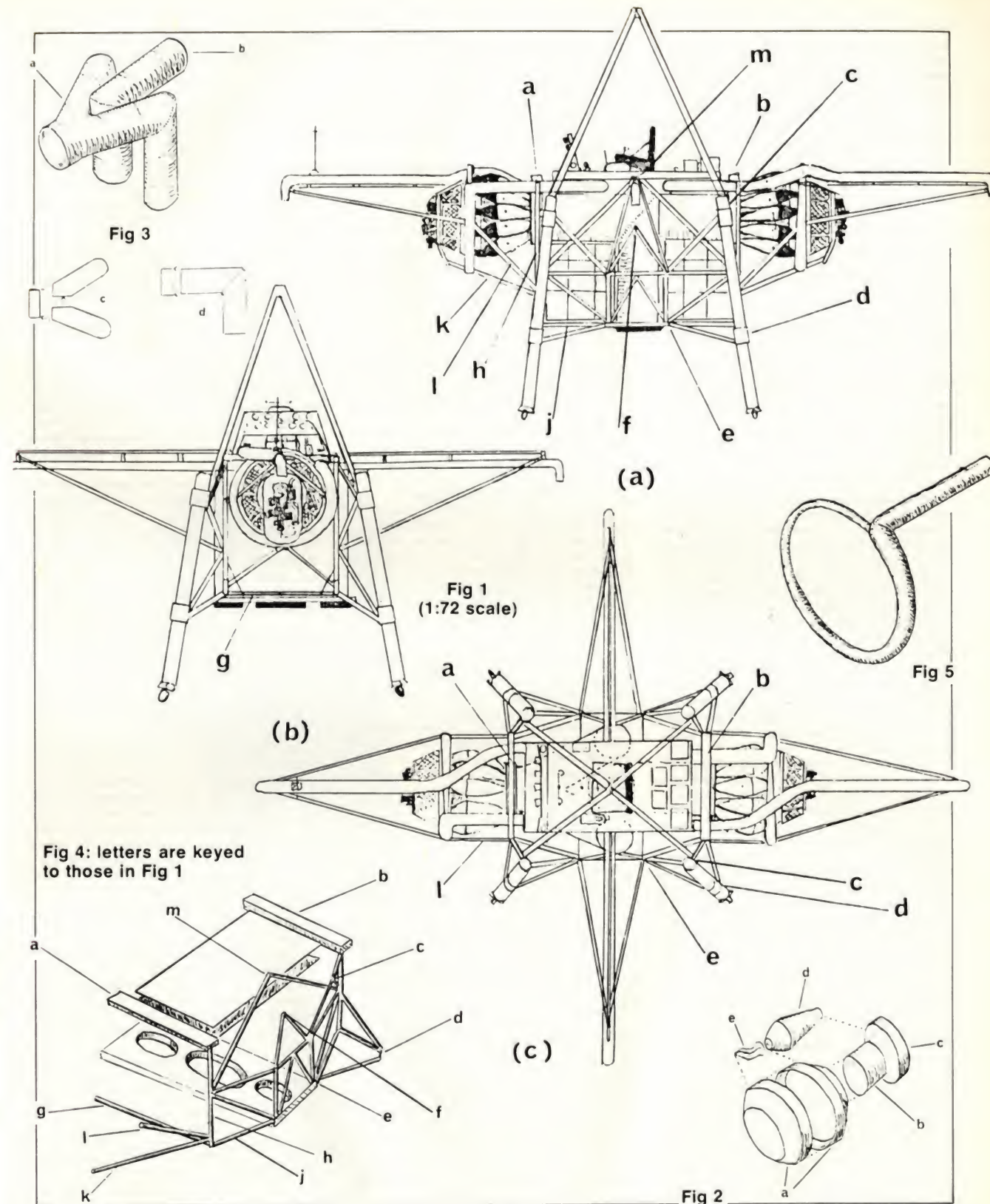


Fig 4: letters are keyed to those in Fig 1



paint tin lids' sooty black.

The engines are cemented to the ends of the horizontal pipes. Once again, security of attachment is all important. Also important is the fact that the pipe rims are completely flat or the engines will be out of alignment.

Next are the fuel tanks. Refer to Figs 1 and 6. These are constructed from 20 thou card and are quite straightforward. The ribs on the sides greatly enhance the appearance. They're made from 10 thou card. The tanks are cemented directly to the jet pipes, fore and aft in the right angles formed by the horizontal and vertical sections of the trunking. The colour of them is probably silvery grey, but I used a bit of licence and painted them in aluminium primer yellow, to add a dash of contrast.

Sitting on top of the exhaust trunking is the flight deck. This consists of two rectangles of 20 thou card, each 30 mm x 17 mm, one on top of the other, separated by four studs 2½ mm high. The gap between these plates gives access to the stabilisation pipes which vanish into the 'works'. Once made and mounted, nothing else is added to the flight deck at this stage since detail items would be battered due to the handling the model gets.

The next items to be made are the main engine supports, illustrated in Fig 5. This was undoubtedly the most difficult piece to make. No matter how much I tried, sprue stretching wouldn't give the right degree of taper, so in the end I resorted to filing. The tapered portion is about 57 mm long. Forming the circle by heat softening also produced some strange results, but was finally achieved by bending a fraction at a time with pointed nose pliers warmed slightly in a flame. The straight section fit into the gap between the upper and lower parts of the flight deck. Two studs on each engine at the 3 o'clock and 9 o'clock positions engage on the inner rim of the supports. Apart from these two points, the rings should not touch the engines.

In fact, the rings on my model are a little far back and do actually engage with the combustion chambers, but it doesn't detract from the overall appearance.

The port and starboard roll stabilisation pipes come next, and are simply pieces of rod 2½ mm in diameter, with the outer ends bent down at right angles. The fore and aft pitch stabilisation pipes are similar, but they have a bend in the horizontal and vertical planes at the inner ends. All four pipes are cemented in the space between the flight deck plates. When these have set, cut two strips of 40 thou card and cement them across the engine support and fore and aft stabilisation pipes (a and b, Fig 4). Note that Fig 4 shows struts for one side and end only; the other side and end are identical. Similarly, the undercarriage leg supports are shown for one corner only.

Now for the bitter bit, adding the framework. These struts should be painted silver before work commences, and touched up at the joints on completion. Figs 1 and 4 plus the photos should give a fair indication of where everything goes, and the order of assembly is up to the individual. However, a few hints won't go amiss.

Note that there are four of everything, apart from strut 'g', of which there are only two. Start with 'g'; this is cemented across the outer face of the fuel tank. Follow up with 'h', from the end of 'g' to the end of 'a' or 'b'. Then add 'j', from the junction of 'g' and 'h' to the corner of the exhaust base plate. Point 'f' attaches to the outer exhaust ducts. Point 'm' attaches to narrow flanges of plastic card (10 thou) cemented along the edge of the flight deck top plate.

Don't attempt to add the undercarriage struts till the main frame has set. The legs themselves are added before the struts have finally set, then sit the main unit squarely on a block of wood, with the legs overhanging the block. Make the block of such a height that the bottom of the legs just touch the table surface. Allow to set for at least 24 hours.

The bottoms of the legs (below point 'd') are lagged in a white material, bound with five metal strips. At the base of the legs are castors, modelled from sprue cut off in thin sections. Surrounding the castors are shrouds with a half cone shaped base. The cone shapes are made by sharpening a pencil in a sharpener, then forcing it through heat softened 10 thou card. From this moulding cut off the sections required for the shrouds. Add the stabilisation pipe supports at this stage if you haven't already done so.

If possible allow a day or two for all joints to set hard. From this point on the best way to handle the unit is by gently gripping one of the engine support rings at the 3 o'clock and 9 o'clock positions, between the thumb and forefinger. If any paint wears off it's easy to touch up later.

Now for cockpit detail. The seat is simply a flat pan with a curved back attached, and an angled strut on each side joining pan and back. Extend these struts below the level of the seat bottom and add a ridge of card below the rear of the seat. This will raise the seat slightly clear of the cockpit base plate. A throttle box with two levers on it is positioned close to the pilot's left hand. At the rear of the flight deck is a row of cubes representing bits of equipment, which are surrounded by a frame of stretched sprue. The rudder bar and control column I joined to the pilot's hands and feet before he was cemented into position. The instrument panel looks a trifle rustic. It is supported on metal plates to bring it closer to the pilot's vision. On XJ314, the instruments are exposed at the back of the panel. On XK426 they are boxed in. I chose to model the former (this is the biggest external difference between XJ314 and XK426) and represented the instruments with lengths of plastic rod.

The pilot is, of course, an optional extra. Mine came from a Jaguar kit. He needed a pair of legs and repositioned arms, so that the left hand was on the throttles. His 'bone-dome' helmet was cut down to represent a leather flying helmet, and goggles were added. Once the flight deck is complete, cement the four struts of the crash pylon together at the top end and join the bottom end to the top undercarriage attachment points. Finally add the sensor device on the front stabilisation pipe. □

THE PORTUGUESE *caçadore* were light infantry troops, who reached a high standard of efficiency under British training methods. They were deployed throughout the Allied field army, to increase the strength of the skirmishing line of the various British, Portuguese and mixed divisions, and earned a considerable reputation. Officers of such elite units as the 60th and 95th Rifles and the 52nd and 43rd Light Infantry, did not give their approval lightly; and the fact that they were happy to serve alongside the *caçadores* speaks volumes for the Portuguese.

The first major battle honour of the *caçadores* was the great victory of Bussaco in September 1810. In this action the 4th Battalion were serving with Pack's Independent Portuguese Brigade, which was posted immediately to the right of 'Black Bob' Crauford's famous Light Division.

There is a good deal of controversy about details of the Portuguese uniforms of this period, and it is not known what proportion of the *caçadores* had yet received the Baker Rifle. This rather more demanding conversion thus involves an element of calculated guesswork — but then, what Napoleonic model doesn't?

You will need a 95th Rifleman kit, for the torso and legs, weapons and equipment; arms from a Coldstream, Imperial Guard, or Black Watch figure; shako from a Coldstream kit; and shoulder 'wings' from a Coldstream or Black Watch kit. The choice of arms and legs depends on desired animation. We chose the Coldstream arms, because we wanted a soldier in the 'priming' position, but the Imperial Guardsman's cuffs would be much easier to paint if the position of the arms suits your plans.

First, the shako. The Portuguese *barretina* worn at this period is shown in the accompanying sketches. It had a leather top, bottom band, and peak, the latter with a brass rim, and a felt body.

First, fill in the top to a sloping line, from the top of the false front down to the centre of the horizontal top, with some suitable filler material. The vertical side seams where the false front wraps around the main body of the shako should be obscured; we suggest filling in the 'countersunk' area rather than filing off the 'proud' area, as the latter method makes the shako too thin and tapered. (If you don't fancy it, don't lose too much sleep over it; the lavish cords and tassels hide most of this area on the finished model.)

The two brass plates can be added from notepaper or thin plastic card, as can the bow-shaped cockade. We used the Coldstreamer's cords and tassel, adding two extra tassels and a cut-down plume on the left side from a Historex bearskin bonnet sprue.

Next, the torso. Take the Rifleman and remove both outer rows of buttons, and every second centre button, starting with the second from the top, leaving five.

*Caçadore in 'priming' position, with powder horn in right hand and Baker rifle held at the high port in left hand.*

# Peninsular War figure conversions

Caçadore, Portuguese 4th Caçadore Battalion, 1810  
by Martin Windrow and Gerry Embleton



Instead of his shoulder-straps, give him suitably modified 'wings' from a Coldstream or Black Watch kit. Cut the fringing from the outer edge of the wing, and file off all top surface detail so that strap and wing are smooth for painting. The five pairs of pointed lace loops on the chest can be painted on.

The arms — unless you use the Imperial Guard Grenadier's — should have all cuff detail filed away, so that the round cuff and three-point cuff-slash can be painted on.

Legs present you with a choice. These troops seem to have worn a variety of nether garments, and we chose the ordinary British campaign trousers, painted grey-blue, but the Rifleman's or Coldstream Guardsman's legs could also be painted white, for the summer linen trousers often worn in the Portuguese army. You could also use the Imperial Guardsman's legs, with high gaiters. These should be filed away down to the line of the garter below the knee-cap. The breeches should be painted dark brown, the shortened gaiter black with a line of yellow tape around the top.

All other equipment, weapons, etc., should be painted and positioned exactly as recommended in the Rifleman kit, though you can vary the details to taste — a cowhide pack from the Imperial Guardsman kit would be feasible and attractive. These were often thrown away on a retreat, to say nothing of the usual scavenging of battlefields, and soldiers of that period invariably helped themselves to whatever might be useful, if it wasn't actually nailed down!

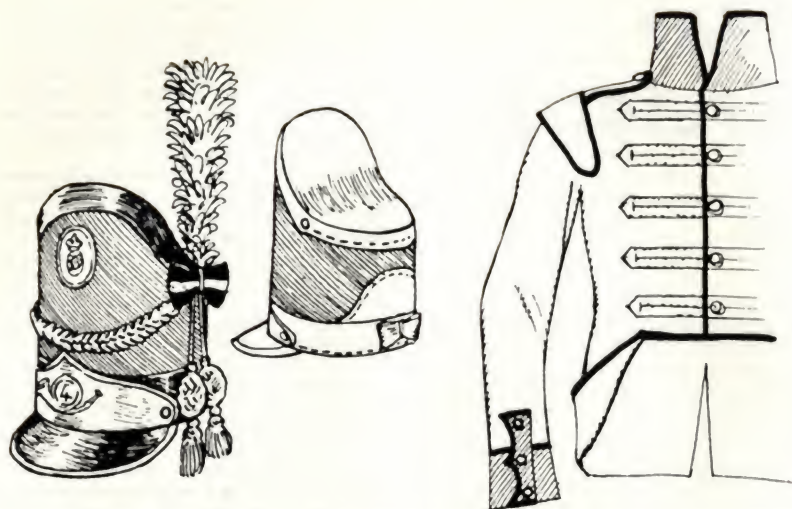
It cannot be stressed too strongly that you should plan the stages of making this figure with great care. The painting of torso detail, fitting of shoulder wings, etc., can be turned into a nightmare if you carelessly stick on a crossbelt too early, or cement an arm in a position which hides some detail without painting the detail first.

Colours for a 4th Caçadore are as follows; details of other battalions will be found in *Military Dress of the Peninsular War* under 42, Plate 9, and in the appendices:

**Shako** — matt black body, gloss black top, gloss black rim round front, gloss black band and rear flap, gloss black peak with brass rim, brass plates, green cords and tassels, dark blue and red cockade, green plume. (NB — one of the five companies in each battalion was made up of *atiradores* — sharpshooters; it is logical that they would have been the first to receive the Baker, so modellers with Puritan consciences should paint the plume black, indicating this company.) **Tunic** — dark brown overall, turnbacks ditto. **Collar, cuffs, cuff-slashes** — light blue piped with bright green. **Shoulder-straps and wings** — dark brown piped with green. **Front join, both edges of turnbacks, and vertical lines down from rear hip buttons** — piped green. (NB — one source states that skirt piping was white, but this seems slightly unlikely. Jackets with more elaborate skirt piping are also known, but this style is confirmed by a Portuguese source for at least some units.) **Chest loops** — yellow braid, doubled and pointed. **Buttons** — yellow metal. All other items as kit instructions.

Another interesting conversion could be





The Portuguese barretina shako — shown centre without fittings for clarity of construction — and the general arrangement of the cadore's coatee. Heavy lines indicate green piping, and shaded areas the facing colour.

made to depict the later Cadore uniform worn from about 1811 onwards. This would involve using a Rifleman's shako with cords removed. A small green tuft rose from the front top of the shako, its base behind a blue-and-red bow-shaped cockade. A brass bugle-horn badge was worn beneath a 'cut-out' brass battalion number. The tunic could be made from a Rifleman, a Hussar and Coldstream shoulder wings, with careful modification. It was brown, with black hussar braiding across the chest between three rows of black buttons. The wings now had woolly fringes around the outer ends. Straps, wings and fringe were all black. The cuffs were pointed, so the Rifleman's arms could be used. Cuffs and collar were of battalion facing colour, the former with a black-piped upper edge and a black trefoil knot above the point. Baker equipment was worn, and all other details seem to have been as on the earlier uniform.

A final point, unnecessary for experienced modellers but sometimes forgotten by the less experienced: the appearance of a figure is enhanced enormously by a bit of care on the display base presentation. Stick the figure down, then add a bit of 'ground'. We used Humbrol body putty, since it is easy to work and dries quickly. Squeeze a good blob of it on to the base and work it into place around the feet, using a tool or knife dipped in water to stop it sticking and stringing (but not too much water, or you get putty soup, which is unsightly and the devil's own job to work with!). Before it dries press into it a few tiny pebbles (aquarium gravel is useful); some clippings of sisal string, for grass or reeds; and/or a small piece of cork, for a rock. Scatter a pinch of sand over the surface of the putty, and press it down lightly with a spatula or blade. Then leave strictly alone until ready to paint, and use muted, mixed colours rather than harsh tones.

With larger bases, such as those for mounted figures, the odd discarded mus-

ket, shako, canteen or pouch always adds a touch of class. Try to achieve a regular edge to your piece of 'ground' — not hard, if the putty is pushed around gently while still moist, as it tends to take up a rounded contour at the edges — and when everything else is finished and dry, paint the edges of the stand and the still-exposed part of the top with a matt paint — black is best. Then keep your sweaty fingers off it! □

Note additional tassels, flounders and plume on left side of shako.



Experiments with a Camel fitted for ground strafing — the TF1 (Trench Fighter No 1).

TRENCH WARFARE brought a new requirement for an aircraft capable of making direct attacks on enemy trenches. For this, downward-firing guns and armour against return fire were considered the essentials.

An armoured Camel, the TF1, was first proposed by industry and an armoured FE2 type by the Royal Aircraft Factory. The prototypes evolved in mid-1918 respectively as the Sopwith TF2 Salamander based on the Snipe, and the AE3 Farnborough Ram, an improved NE1 night flying experimental aircraft.

Only the three prototype Rams were built, B8781-8783; but the three prototype Salamanders, E5429-5431, were followed by large-scale orders from Sopwith commencing F6501 and from contractors of which the Glendower Aircraft Company built several from J5892 before the Armistice brought a general cancellation of orders.

#### Salamander scheme

On the production Salamanders, conventional twin Vickers lined up along the fuselage for firing in a dive were used, but splayed downward-firing Lewis guns could also be installed. The aircraft was fitted for carrying four 20 lb bombs in its close support role.

While the initial Sopwith Salamanders were being given the new chocolate-brown AMA doping scheme in late 1918, a change was made to introduce on the Sopwith and Glendower lines the new 'Camouflage of Aeroplanes for Observation', and the Salamander became the only aircraft to have this most colourful of all British service camouflage schemes.

The scheme, illustrated here, was tested on a Sopwith Pup and Salamander flown at 1,500 to 2,000 feet and observations were taken from several aircraft at 5,000 to 7,000 feet; the object was to find a scheme that would give a single-seat aircraft, engaged on close co-operation, some protection from enemy fighters by low visibility.

The coloration was designed for autumn and winter use, with a proviso that it might be necessary to modify the colours according to the sector of the front. North of Ypres, where the low lying ground was continually being churned by shells, would need a darker background than further south

AIRFIX magazine



#### Part 4 — Close support

where new advances were being made over open grassland.

From the experiments made, some interesting conclusions were arrived at, which appear to have been soon forgotten.

These were:

1. Attempts at reproducing natural features such as shell holes are useless. The scale of the aeroplane in comparison with its vast background is too minute for it to be practicable.
2. Pattern and tone are of greater importance than colour, so long as the colours are reasonably like those of the landscape background.
3. A scheme which provides for a strip of light colour between dark and medium colour patches, invariably appears to give good results. The position, proportions and tone of these light strips will make or mar most schemes.
4. It is essential that colour patches should be arranged to break up wing leading and trailing edges.
5. The design painted on the bottom plane of biplanes is of minor importance as it is seldom seen from above; it should have a predominance of light colour to compensate for darkening by shadow from the top wing.
6. Red and yellow, particularly an orange tint (now used for high visibility markings) should be avoided. Green should be of an olive or khaki quality (as the doping colours then in use). Purple was said to be a good colour and in disruptive patterns could be used for the darker patches. Blue, it was pointed out, unless it is very light, appears black in the air.

7. The use of distemper colours (used by the Germans in particular in the Second World War) was advocated on surfaces that were not liable to be spattered with oil — which rather precluded the Salamander with its BR2 rotary engine.

These recommendations relating to the new scheme were issued in a confidential document CIM733 dated September 3 1918 and was printed the following October 2 and issued to formations.

March 1975

troublesome and not until 1919 did these prototypes fly when production was no longer a requirement.

A new aircraft specifically designed as a two-seat armoured contact patrol aircraft went to France in October 1918 for evaluation. This was the prototype Sopwith Buffalo H5892, but its production was not planned as it was classed as an 'experimental machine possessing features likely to be of use to the RAF.'

The Salamander, however, was in production and with trench warfare giving way to open warfare as the Allies made their final offensive, it was seen as a close support strafing aircraft. This low-level work would qualify it for the new patterned camouflage that had been tried experimentally, and so a number of Salamanders on the lines in late 1918 were given this new scheme.

They were to have entered service with the newly-formed Nos 157 and 158 Squadrons mobilising at Upper Heyford late in 1918. As it was, the war ended and the Salamander was never used operationally, nor was this new camouflage scheme put to the test. Moreover, the scheme was never re-introduced and apparently nothing like it has ever been seriously considered since. □

Drawings on page 424



Above standard Salamander finish in the typical Sopwith style with serial number in a white box. Below Sopwith Buffalo H5892, the only British armoured contact patrol aircraft to reach France.





# Salamander Camouflage Scheme

(based on official drawings and photographs)



An important aspect of the marking was the black line bounding the various colour areas which varied from 2 to 4 inches in thickness.

Drawn by Peter G. Cooksley



Part 22 — The Muscovites



a 16/17th Century Russian cavalryman wearing 'saucer' helmet with mail hood (popular in the Caucasus) and mail shirt with plate 'corset'. He has a short straight sword and convex metal shield with fringe round edge, of a type often used by Russians. b Russian noble cavalryman in Sassanid-style helmet, with pennon, face-mask and neck protector of mail, studded brigantine and mail shirt. Note soft boots held up by a type of gaiter. He is armed with bow and three javelins in a case. Some alternative helmet types are shown above. c Russian light horse archer of the 16th Century in padded doublet. Carries knife and bow, no sabre. Note riding crop hanging from right hand little finger.

George Gush

## renaissance warfare

RUSSIA IN THIS period was still primarily the Grand Duchy of Moscow. It was only in 1480 that the Tsar dared withhold annual tribute from the Tartars, and the extension of Russian power thereafter, against Poles, Turks, Swedes and Tartars, and into Siberia and the Cossack lands, was slow and often reversed. Such as it was, the rise of Muscovy was largely due to the adoption of European military ideas, well before the thorough reforms of Peter the Great. The pattern of her armed forces was created by this process: the basis a semi-feudal, Tartar-influenced cavalry horde, gradually supplemented by European types, and by mercenaries including Poles, Tartars, and, above all, Cossacks.

### The cavalry army

'All his men are horsemen, he useth no footmen, but such as go with the ordinance and labourers' wrote Richard Chancellor in the 1550s, and even a century later cavalry still greatly exceeded infantry in the Tsar's field armies.

This arm was drawn from three main sources; first, the entourage of the Tsar and princes. From Ivan the Terrible's day

(1533-82) there had been a 'Dvorani' or household force of 15,000 paid cavalry or noble pensioners.

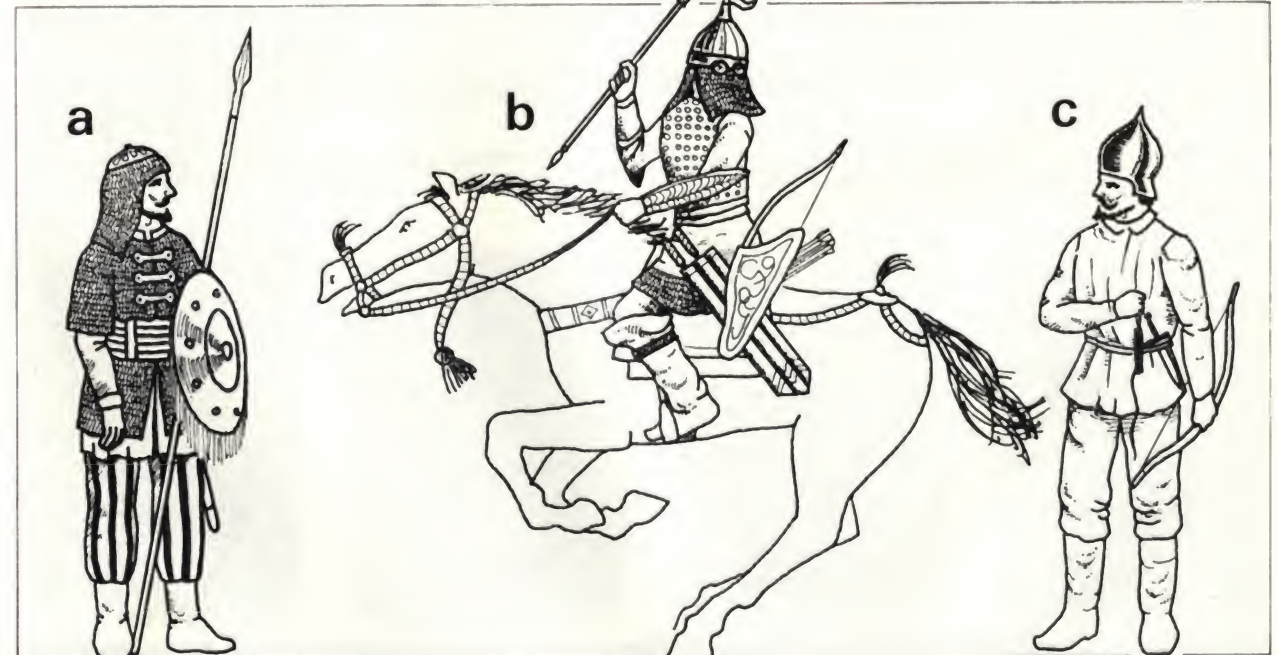
Second came the rest of the nobility and their followers. Ivan regularised their service by paying 110 great nobles to report once a year with their 65,000 retainers; the rest were only summoned in emergency.

Third were the 'Sons of the Boyars' (Boyar=noble), a lesser military class who received small holdings of land in return for military service. Created by Ivan III (1462-1505), they were registered in the towns and mustered in town contingents, accompanied by varying numbers of armed servants.

The resemblance to the Turkish system is obvious (see *Airfix Magazine*, March 1974), and the general tactics and equipment also followed the Turkish or Eastern pattern; the better-off wore mail or scale armour, and helmets of Eastern type, though contemporary observers were particularly struck by the splendour of their appearance, with costly furs, silks and satins, gilt embroidery and inlays, elaborate, often jewelled, collars and horse trappings, and even silver mail. Servants and retainers often wore padded clothing, adequate to stop an arrow.

Weapons included light lances, various maces (especially the 'kisten' shown), scimitars and light javelins, and by the later 16th century a few carried a case with two 'dags' (short pistols), but the Russian weapon *par excellence* was the Tartar composite bow; relatively few carried lances, and they rode jockey-style, like the Tartars, with knees drawn up, ideal for the horse-archer but not for standing the shock of a lance charge. Russian horses were small but wiry geldings again unsuited to shock tactics.

Continued on page 429





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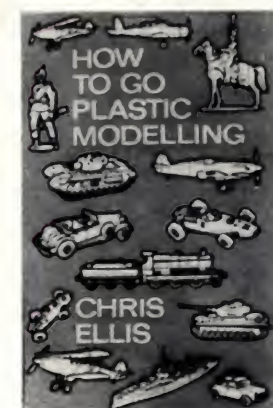
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Continued from page 425

Most of the lighter cavalry carried only a dagger or sabre beside the bow. Tactics were loose and irregular, relying on surprise, envelopment (assisted by the Muscovites' usual vast numbers) and fire, and avoiding close combat. Though not highly disciplined they were organised on similar lines to the Tartars, with squadrons of 100 and regiments probably 1,000, but the only divisions clearly observed were the five (later six) large 'Polks' or divisions into which the whole force was divided. These had their own standards (of St George) and commanders, and seem to have comprised Left and Right Wings, Van, Reserve, Main Body and Light Cavalry (one section was known as the Broken Band and supplied men for 'sudden exploits'). They had many trumpeters, but the leaders gave tactical signals on small brass drums (there were also some huge drums carried on platforms across four horses and beaten 'in a wild manner' by eight men each!).

#### The Streltsi

Ivan the Terrible was responsible for a general reorganisation of the Russian forces, and perhaps his most important

reform was the creation of a standing body of infantry, the Streltsi (sharpshooters), a hereditary, town-based force. There were 12,000 in Moscow, of whom 2,000 formed a guard for the Tsar, and the total corps perhaps reached 40,000 strong. Though there seem to have been some Streltsi with pikes in the early 17th Century, they were normally armed with long arquebuses or muskets, clumsy matchlocks with straight stocks, and also carried sabres and berdish poleaxes with a spiked haft which could be used as a musket rest. Though useful, they showed in the later 17th Century much of the Praetorian arrogance and rebelliousness of the contemporary Janissaries (who may have been the model for their corps), and the Moscow Streltsi were bloodily suppressed by Peter the Great in 1698, the rest being disbanded in 1710.

Streltsi regiments were divided into companies or sotnia of 100, and (at least in the 1670s) ranged from 600 to 1600 men. They wore no armour except helmets, and their issued clothing seems to have been semi-uniform from an early stage, with the regiments distinguished by colours, including red and green. The following list of the 1674 Moscow Streltsi probably gives an idea of earlier colours as their style had certainly changed very little.

Regiment (named after Colonel)	Dress	Buttonhole-lace	Trim, lining	Hat	Boots
1st Igor Lvotokhin	Red	Raspberry	Raspberry	Grey	Yellow
2nd Ivan Poltev	Lt. Grey	Raspberry	Raspberry	Raspberry	Yellow
3rd Vasili Bokvostov	Lt Green	Raspberry	Raspberry	Raspberry	Yellow
4th Feodor Golovinsk	Cranberry	Black	Yellow	Grey	Yellow
5th Feodor Alexandrov	Scarlet	Dk Red	Lt Blue	Grey	Yellow
6th Nikifor Kolobov	Yellow	Raspberry	Lt Green	Grey	Red
7th Stepan Ivanov	Lt Blue	Black	Brown	Raspberry	Yellow
8th Timofei Poltev	Orange	Black	Green	Cherry	Green
9th Petr Lopokhin	Cherry	Black	Orange	Cherry	Yellow
10th Feodor Lopokhin	Yellow-orange	Raspberry	Raspberry	Raspberry	Green
11th David Vorontzov	Raspberry	Black	Brown	Brown	Yellow
12th Ivan Naramansk	Cherry	Black	Lt Blue	Raspberry	Yellow
13th Lagovskin	Bilberry	Black	Green	Green	Yellow
14th Afanasii Levshin	Lt Green	Black	Yellow	Raspberry	Yellow

Left d 16/17th Century Russian cavalryman. Sabres often had loops, so they could hang from the wrist. Corselet and cape are of combined mail and plate. His helmet is a padded type with a metal band to support the nasal. A light javelin is held in an extra pocket of his quiver. e Cavalryman with padded protection. The weapon in his hand is a 'kisten', an iron knob on a stout leather strap attached to a short handle. Note also riding position, with knees drawn up like a jockey. f Senior officer or noble of 16/17th Century. Note very tall hat, decorated coat skirts and boots. g 17th Century Streltsi with musket slung on back and berdish axe. h Streltsi officer with halberd. Note corners of overcoat turned back, and hat with metal crown, the sign of an officer. i an early 17th Century Streltsi wearing a strikingly modern-looking helmet. j Streltsi

drummer. His dress does not distinguish him from other Streltsi. Note very small drum. k Noble cavalryman in mail reinforced with plates, vambraces on forearms and helmet with mail aventail covering the eyes. Armed with bow, sabre and light lance. Could also have kisten or mace, round shield, or small axe-cum-hammer. l Mounted Boyar or noble, probably an officer, in war dress. The faceted mace is a sign of high rank. He wears a Russian type of corselet of plates, the chest plate being octagonal, with mail sleeves and oriental-type vambrace. Helmet has high-mounted nasal, ring of plates attached by mail, and mail, to which side plates are attached, hanging over the eyes. His boots are also armoured, but as usual with Russians of this period lack spurs (they use instead the whip hung from the wrist).

## squadron codes and colours 1939-1956

By Michael J. F. Bowyer and John D. R. Rawlings

#### 81 Armament Practice School, Spilsby, later 2 APS

Used initially at Spilsby and later at 2 APS Acklington until at least 1950. Used on a variety of aircraft including Martinet 81:16-HP327, Harvard IIB 81:S-KF342, Mustang IV 81:K-KM218, Mosquito VI 81:B-TA555, Master II 81:F-DM128, Spitfire 16 81:M-TE178.

#### 81 34 Bomb Group, USAAF (c)

Letters used on B-17s (post-war) of 18th Bomb Squadron. Formed December 1 1943 in Italy and equipped with Spitfire Vcs. To southern France September 1944, then operated over southern Germany and Austria. Disbanded November 1945. Successively operated Spitfire Vcs, LF8s and Mk 9s.

NB: The letters 'I' and 'C' were not used in code letter combinations until autumn 1943. American allocations were made between September and December 1943. Letter/number codes were not displayed on USAAF aircraft until December 1943.

#### JA 1652 Conversion Unit (c)

For details of unit see entry under GV. Letters used on Halifaxes, eg Mk II series i JA:A-DT786 in use January-October 1944; Mk II series ia JA:J-HR748 in use January-July 1944; Mk V series ia JA:W-LL237, and B Mk III.

#### JB 81 OTU (c)

For details see entry under EZ. Known to have been used on Spitfires of the unit, eg JB:D-W3959, JB:A-EP411, but probably principally on Whitley Vs, eg JB:V-N1480. Anson used — JB:W-MG589 used December 1944 to March 1946. Unit became 1380 TSCU, where MG589 served briefly.

#### JA 65 Wing HQ, USAAF (c)

Used on liaison aircraft of the Wing HQ. Allocation confirmed, used post-war as on Oxford JC:H-V3571 which served in the Flight's markings when on the strength of the Fighter Command Communications Squadron.

#### JD 384th Bomb Group, USAAF (c)

Letters carried on B-17s of the 545th Bomb Squadron June 1943 to June 1945.

#### JD Station Flight Grimsetter (c)

Allocation confirmed, details not known.

#### JE 195 Squadron (c)

Formed at Duxford November 16 1942 and equipped with Typhoons. Disbanded February 15 1944. Example JE:D-JP648 used August 1943 to February 1944.





## More figure conversions from Sid Horton

THE SUBJECT OF this month's conversion is the 17th Lancer carrying a wounded trumpeter, which is, I think, the highlight of this work, and is situated just right of centre in Lady Butler's painting.

In their superb book *Honour the Light Brigade*, William M. Lummis and Kenneth G. Wyn (published by J. B. Hayward & Son, 17 Piccadilly Arcade, London SW1 6NL, price £4.50) include 2,000 short biographies of all the officers and men of the five light cavalry regiments that served in the Crimea, whether they rode in the 'Charge' or not. Those that did are clearly shown by having their names set in a much heavier type.

There is an entry, Trumpeter, John Brown

2nd (there being more than one John Brown in the Regiment) at the end of which they say 'featured in Lady Butler's Picture "The Return from Balaklava" shown as mounted and carrying a wounded lancer', but if you look closely at the painting you will see that it is the TRUMPETER who is being carried. Here we go again! Which is right? Well, I have made this conversion comply with the painting.

There are lots of contemporary accounts of the returning stragglers and wounded making their way back up the 'Valley of Death'. The one which I think sums it up best is that of Mrs Duberly (wife of the Paymaster of the 8th Hussars, who

just for the record did not ride in the 'Charge' nor did he belong to the 11th Hussars as is suggested in the recent film) who mistook them for skirmishers.

This conversion is perhaps the most difficult in the series, but I hope that I have led you into it slowly, and have whetted your appetite for this particular conversion which, I think, is the best in the painting. After all, if you had any success with the two standing figures in the December issue, with their entwined arms, then this is a natural progression with both arms of both figures entwined, around one another, one again supporting the other. It's all just a question of looking and doing.

To the conversion. The kits and parts from them you will need are: Airfix Hussar — the horse, shabraque, portmanteau and two sets of arms; Scots Grey — horse blanket, rolled blanket, stirrups and bit; Polish Lancer — two heads, two bodies, two sets of legs and the horse's tail. I used the hands from various kits including those from the 95th Rifleman which are excellent. The trusty blade No 228 and small trumpet No 16, both from Historex Spares, 3 Castle Street, Dover.

This article is more difficult to write than previous ones, as it is dealing with two entwined figures. The text has to be entwined also so, if you can, please remember that the wounded trumpeter is being carried and the lancer is doing the carrying.

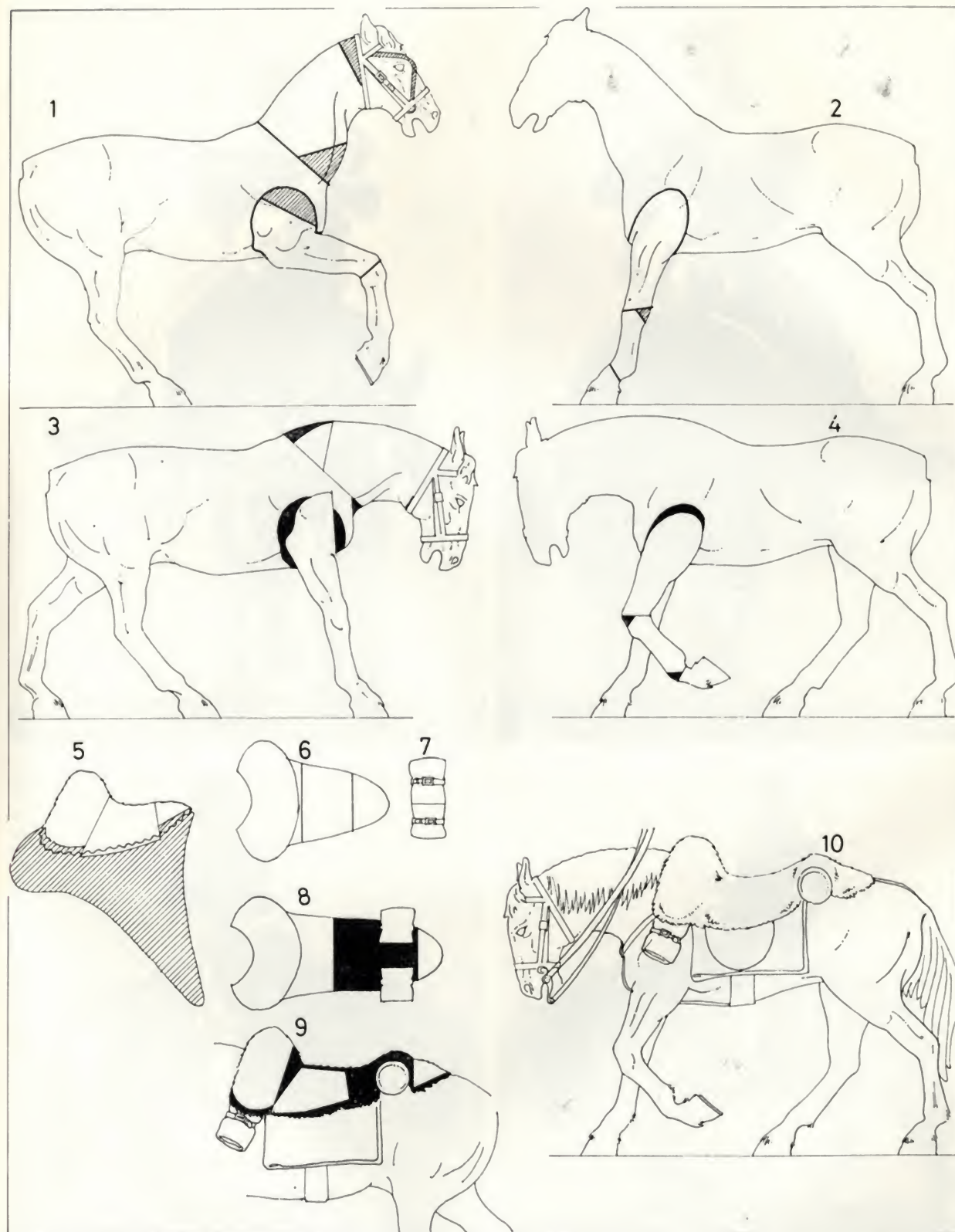
First of all I'll start with the horse which must necessarily be made first, as a base for the figures. The horse itself comes from the Hussar kit. This is quite a simple horse conversion (for anyone who has tried the various pieces of butchery I have endeavoured to explain in previous articles) and is a basic tired horse, which could be used in any diorama, eg a gun team or any cavalry where the horses have been ridden to the limit or beyond.

As I have so often said before, I have no intention of you, dear reader, following these articles precisely. There are only one way, my way, of doing a conversion and ideas that may strike a chord or come in useful in something you are working on yourself. Another thing is, don't be frightened of chopping up horses (unless, of course, you are poorer than me), since you may come up with some interesting results. I find that this hobby is just trial and error to gain experience. When, of course, you, and I for that matter, have that experience we can go on to greater things but, for the time being, we shall have to content ourselves with the likes of this.

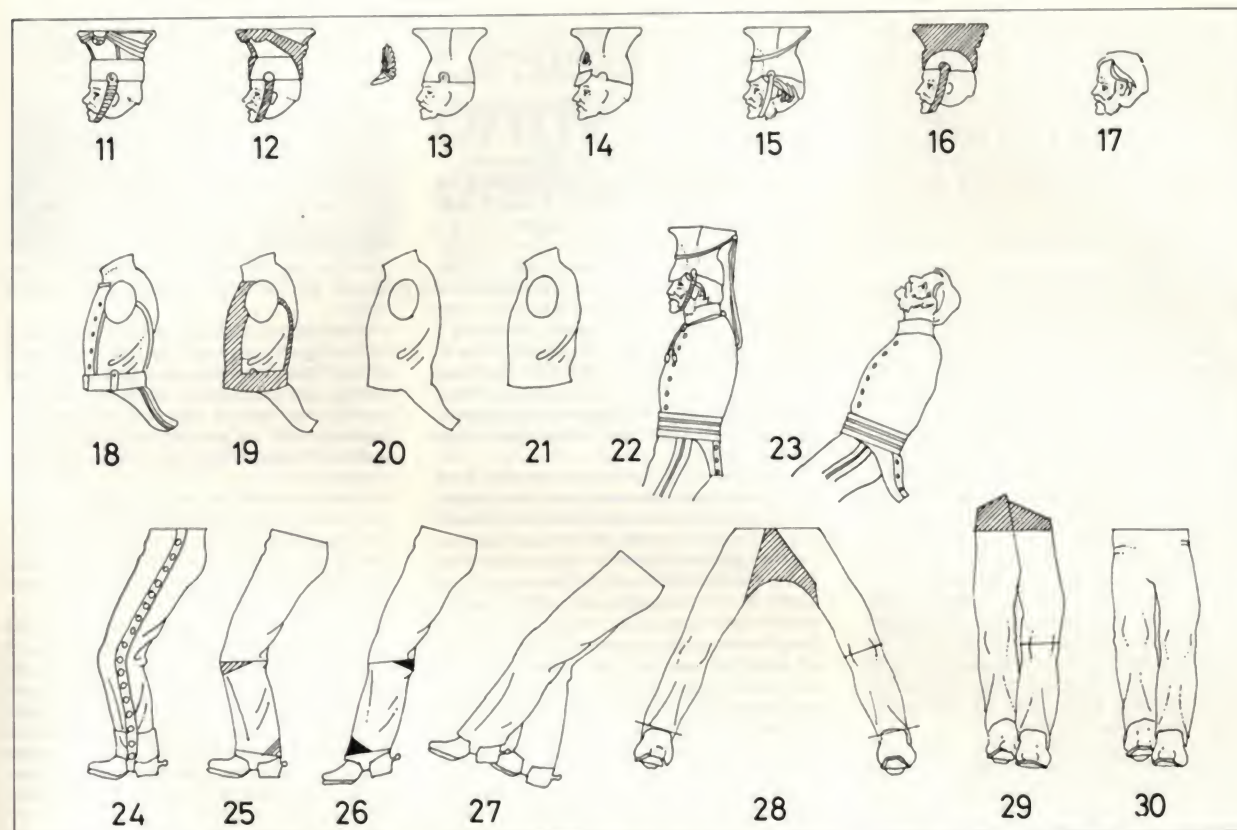
### Key to the drawings

- 1 'Hussar' horse: remove shaded areas and front foreleg. Heavy black lines show cuts
- 2 Horse left side: remove front foreleg
- 3 From 1 re-position foreleg and neck
- 4 From 2 re-position foreleg and neck
- 5 Shabraque: remove shaded area
- 6 Shabraque from above showing cuts
- 7 Portmanteau showing cut
- 8 How to build sheepskin from above
- 9 How to build sheepskin from side
- 10 Finished horse

The assembled model before cutting in half for painting.







#### Key to the drawings

- 11 Basic Lancer head
  - 12 Carve away shaded area
  - 13 What you should have and the sunburst plate and peak
  - 14 Sunburst etc in position
  - 15 Finished Lancer head
  - 16 Another Lancer head: remove shaded area (Trumpeter)
  - 17 Finished Trumpeter's head
  - 18 Basic Lancer body
  - 19 Basic Lancer body: carve away plastron
  - 20 What you should have for the Trumpeter
  - 21 What you should have for the Lancer
  - 22 Finished Lancer showing approximate angle when mounted
  - 23 Finished Trumpeter showing approximate angle when mounted
  - 24 Basic Polish Lancer legs
  - 25 Left leg of Trumpeter showing cuts
  - 26 Left leg of Trumpeter showing assembly
  - 27 Finished Trumpeter's legs showing approximate angle when mounted
  - 28 Trumpeter's legs from the front: remove shaded area
  - 29 Trumpeter's legs from the front assembled: remove shaded area
  - 30 Finished Trumpeter's legs from the front
- Left** a selection of photos of the completed model

longer you can keep your itchy fingers off it, the easier it is to work on.

When the body is dry, carefully, and I mean carefully, with a razor saw, and using the usual diagonal cuts, remove both forelegs, as shown in the drawing, then reposition the right hand side upper foreleg, if at all possible (from the extensive spares box you should have if you have been following these articles). You will need a lower left foreleg, from the knee down, to cement in place as a new lower right leg. If you have no spares you can, with a little skill and deftness, make the new straight right leg from the existing one.

After removing the left foreleg, saw right through it twice, at the knee and again at the hock. Re-position the upper left foreleg, at the angle shown in the drawings, then remove a small wedge from the back of the knee, allow the lower foreleg to follow the next angle, the hoof likewise.

While writing this article, I have just had a brilliant idea! You could re-position both the upper forelegs as mentioned above, then swap over the lower forelegs, below the knees. It should work. I've not tried it — I only wish I had thought of it before, it would have saved a lot of work. Still, as I have said before 'trial and error' is one way of finding out if a conversion works.

Now make the cuts through the neck and, using the drawings and photographs as a guide, re-assemble. You may not wish to bend the neck so low. This is entirely up to you. All you have to do to achieve this is to

remove less plastic from the cuts, but I'm digressing, as usual.

Cement the head in place, in its new position shown in the drawings. Allow to dry thoroughly — then fill with Squadron Green Putty and, when this is dry, sand smooth. Take the shabraque from the Hussar kit and carefully remove the sheepskin. Assemble the sheepskin and allow to dry, then, with a razor saw, cut right through the sheepskin twice, once just behind the hump and once again in the position shown in the drawings. The component parts can now be cemented in place on to the horse.

Saw right through the portmanteau so that you have two separate equal halves and cement them between the two rear parts of the sheepskin, as shown in the drawings.

Now, take the horse blankets and saddle flaps from the 'Grey kits and carefully cut to follow the shape of the lower edges of the sheepskin; quite a lot of plastic may have to be pared away from the underside of the horse blanket to allow it to fit snugly against the side of the horse. The saddle flaps can also be thinned down at this point. Cement the two parts of the horse blanket in place, butt jointing it up against the lower edges of the sheepskin.

From the rolled cloak of the 'Grey cut the two end pieces the length of which is shown in the drawings. Cement these to the horse to look as though they are projecting from under the hump of the sheepskin. All this work is best done with tube cement.

Allow to dry thoroughly and cement in

Take the horse from the Hussar kit and cement the two body halves. Leave to dry thoroughly, preferably overnight. The

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place the girth, breast straps, and crupper, which are cut from the 5 thou plastic card supplied with these kits, with Mek-Pak or a similar liquid adhesive. Do no more work on the sheepskin until the figures have been completed, as quite a large section of the front hump has to be removed, to allow the wounded trumpeter's legs to sink down into the sheepskin, which is, of course, soft, over a rolled cloak, which is also soft, and the dead weight of a wounded man would flatten them.

Also, at this point, cement the bit in place, but not the reins. Cement the horse to a temporary base, and place on one side.

Take the two Czapskas from the Polish Lancer kits and assemble, leaving off the sunburst plates and peaks for the moment. I'll come back to these presently.

Cementing the masklike faces in position carefully, allow to dry thoroughly. When, and only when, they are completely dry, take one of the heads and, with a new blade, carve away all cords and raised decoration. Carefully remove the rather heavily moulded chinscales of this particular kit, taking care not to damage the face.

Now cement in place the sunburst plate and the peak in its new position flat against the forehead. Carve in the waist of the Czapska taking care to preserve the basic shape. The ones of the Crimean period had much narrower waists than the Napoleonic ones represented in this kit.

Now fill all the indentations of the sunburst and fair its edges into the body of the Czapska with Green Stuff. Fill any slight gap between the sunburst plate and the peak, and sand smooth so that it looks as if a foul weather cover is being worn.

Build up the hair and side whiskers in the usual way by applying Green Stuff in small amounts with a darning needle and working up into a hairlike texture while still wet.

The cap lines, those that go round the body of the Czapska, are made from stretched sprue and can now be cemented in place with Mek-Pak. Leave the hanging ones until the figures have been completed.

Take the other head and cut away the Czapska altogether. Carve to the familiar bald-headed shape, carefully removing the chinscales as above. Remove any flash and mould lines and generally clean up. The nose can be slightly altered for the same reasons given in a previous article. Build up the hair and slightly different side whiskers, with Green Stuff using the method mentioned above. Place both heads on one side.

Take the two bodies from the Polish Lancer kits and assemble. When dry carve away the rather heavily moulded plastron and button detail. Carve away the waist belts, generally clean up and sand smooth. The body which is to be used as that of the Lancer has its coatee tails removed. The other does not but these tails can be thinned down and all decoration removed from them. New waist belts are cut from the 5 thou plastic card supplied with these kits, cemented in place using Mek-Pak.

Take one of the pairs of riding legs from any of the kits and remove all raised decoration, mould lines and generally clean up. Before you cement them together make

quite sure that they fit the horse, remembering that it has the added width of the blanket. When you are satisfied, cement them together and the legs to the body with its coatee tails removed. Try to make the body lean back slightly, because he is supporting the dead weight of his comrade.

When dry fill any slight gaps between the body and legs and when this is dry sand smooth and add the new coatee tails cut from 5 thou plastic card.

Take the other pair of legs, clean up, etc., as above, and following the drawings, carefully remove the shaded areas and saw right through the legs at the knees, removing a small wedge from the backs of them to allow the legs to bend. The feet also have the same thing done to them so that they can be cemented in place hanging limply. Now comes the hard part, which can only be done by eye.

Place the figure of the Lancer well back on the sheepskin. A small amount of plastic may have to be removed from the portman-teau to accommodate his behind, and see that he sits well down in the saddle. Now place the legs of the trumpeter across the hump of the sheepskin and, with a pencil, mark how much plastic has to be removed from the sheepskin. Remove it. With a touch of Mek-Pak, cement the Lancer and the trumpeter's legs to the sheepskin. (Not too much Mek-Pak as it is only holding the parts in place for this one operation, then they have to be removed.)

Take the body of the trumpeter and hold in position on the top of the legs at the suitable angle. This can only be done 'by eye'. You will notice that some amount of plastic may have to be removed from the top of the trumpeter's legs and the belly and chest areas of both figures, to allow them to fit snugly together. Do this.

Now we go into the trial and error phase. I made this whole conversion twice before I was satisfied. The arms are a masterpiece of ingenuity. Your ingenuity, as the angle of the trumpeter's body has to be accommodated, and yours may be different to mine, so it's almost impossible to explain, but rather heavy surgery has to be carried out on all four arms to make them fit as close as possible round the bodies.

Remember that the Lancer is carrying the dead weight (again) of the trumpeter, and he cannot do this if his arms are scale inches away from the trumpeter's body. Cement the arms in place.

Note, the arms bend only at the elbows and wrists. The bones within do not. This may

A detail view of the completed figure.



seem an obvious remark, but it needs to be said, as the temptation to fit the forearms, especially, around the body by bending them is great. Don't worry if you do not get this right first time. Join the club. I spent one whole day just making the arms, cementing them in place, taking them off, altering the angles, re-cementing them, ad infinitum, until I was satisfied and, when the basic figure was finished and had been photographed (shown in this article), I thought 'No, it's not right' so started all over again. But that's one of the beauties of this hobby.

When you are satisfied with the general fit of the figures, the heads can be cemented in place. That of the trumpeter 'loll'd' over the arm of the Lancer, who is looking concernedly down at his comrade. The expressions have to be painted on. Fill any slight gaps with Green Stuff and, when dry, sand smooth.

Carefully remove the figures from the horse and build up the sheepskin, by applying liberal amounts of Green Stuff and working it up in a fur-like texture, making sure that the figures appear to sink down into it.

Now it may well dawn on you 'How the hell am I going to paint this?' Well, if you're a good painter (and I make no pretensions about that) you paint them as they are, but I carefully separated them, by sawing straight through all four arms so that the body of the Lancer has one arm of the trumpeter cemented over his shoulder and the other around his waist and the trumpeter is vice-versa.

While the two figures are separated the cap lines and trumpet cords can be added from stretched sprue, the cross belts and sword belts cut from the 5 thou plastic card supplied with the kits and cemented in place with Mek-Pak or similar liquid adhesive. The painting can now be done.

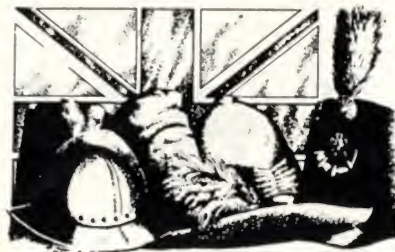
When the figures have been finished they can be cemented together again and any slight gaps between the arms filled with Green Stuff and sanded smooth before re-painting the arms.

The stirrup leathers are cut from 5 thou plastic card and after cementing them to the stirrups from the 'Grey', they are fitted over the feet and the leathers cemented to the inside legs of the Lancer. Add Historex sword No 228 and small trumpet No 16. Cement the finished figures on to the painted horse and add the reins. Finished!!!

### Painting

Each to his own technique and type of paint, so as is my usual practice I will only give the colours:

**Czapska** — black oilskin cover, yellow worsted cap lines, brass chinscales and lionheaded bosses. **Coatee** — navy blue. Collar, cuffs, turn backs and the back seams of the jacket — white. Gauntlets — white, buttons — brass. Waist belt — yellow-red-yellow, etc. Sword belt and slings and cross belts — white. Pouch — black leather. Scabbard — steel. **Overalls** — mid-grey with white stripes, black boots, steel spurs. **Horse** — chestnut with a white blaze. All horse leathers — brown. **Horse blanket** — mid-grey. Sheepskin — black. □



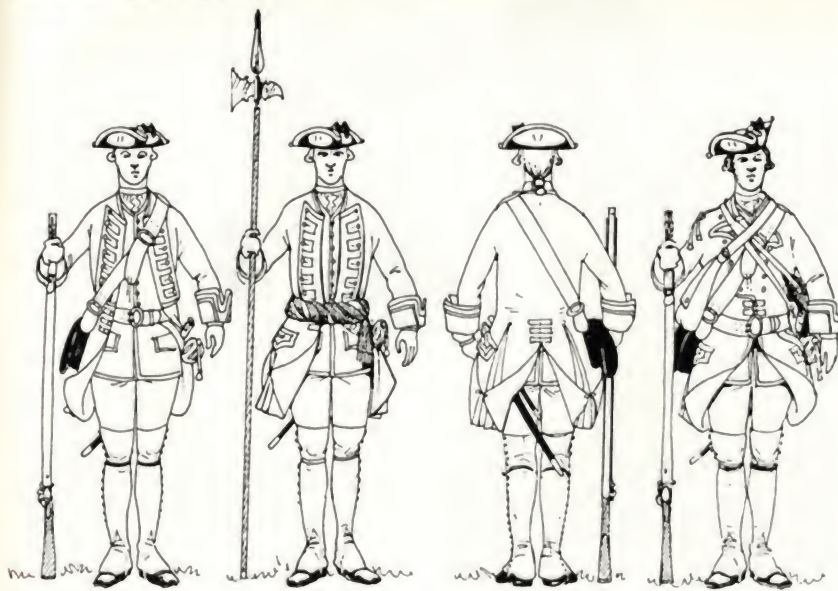
The 15th Foot circa 1750 by Bryan Fosten

THE 15TH FOOT was raised in 1685 with the title of Sir William Clifton's Regiment of Foot. Early inspection reports show that the first uniform was red lined with red, grenadier caps bound with white with the Royal Cypher on the fronts. The 1742 clothing book reveals red uniforms faced with a darkish yellow and with plain white buttonhole looping. The waistcoats and the breeches were also red.

In 1750 the uniform remained the same colour, red faced with the darkish yellow colour, and is represented in the series of figures of grenadiers of the British infantry painted by David Morier. Morier was a Swiss painter highly thought of by the Duke of Cumberland who is said to have commissioned the paintings to illustrate the uniforms of the period.

The grenadier represented by Morier is wearing the mitre-shaped cloth cap which had become the mark of the British uniform of this period. Fully developed from the soft loose bag type of cap worn at the beginning of the century, it was now an elegant tall headdress which gave great height to the British grenadiers and made their presence very imposing indeed.

From the left, a Battalion Company private, a sergeant with halberd, a rear view of the coat showing the position of the side folds, and a private in full marching order. The gaiters would be of brown canvas for marching.



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## british army uniforms 1660-1900

Morier's figure has the loose frock type coat buttoned across the breast as worn in marching order with the tops of the yellow faced lapels turned back to reveal two triangles decorated with white edging and buttonhole looping of the regimental pattern. The deep cuffs and the loosely turned back skirts also show the facing colour.

Uniforms had now become sophisticated enough to include much regimental detail. In the case of the 15th this included the regimental lace which was white with a woven-in stripe of biased yellow and black thread along each edge.

The grenadier caps were worn by all ranks of the company. For the rank and file the caps were red with a dark yellow front and with large white pompoms. The little flap in front was red bound with white and with an inner white border. Between these two bindings the Hanoverian motto 'Nec Aspera Terrent' was embroidered in white thread.

Below this border was a white embroidered Hanoverian springing horse with its head to the right. Beneath the horse and serving as a base to the little flap was a thick, biased bound, green and white trim.

The turned up border at the back of the cap was in the facing colour with a central white embroidered flaming grenade bordered on either side by a '1' and a '5' and with sprays of palm or other foliage. The red back had two pipings of white and there was a similar binding around the upright front.

On the yellow fronts of the rank and file caps was embroidered, in white thread, a decorative Royal Cypher ('GR'), with the Royal Crown in proper colours over it. On either side of the cypher sprays of foliage.

Inspection reports reveal that in 1754 the officers of the regiment had silver lace and silver shoulder knots and that the facings were truly dark yellow.

The officers of the grenadier company were known to have worn caps with a special design on the front. This consisted of the full Royal Arms in proper colours with a large Royal Crown above and bordered with sprays of silver palm. The grenadier officers of this regiment had white waistcoats and breeches and wore black gaiters. The rank and file had red waistcoats and breeches the former bound with the regimental lace.

### The grenadier company Officers

Either the special mitre shaped cap as described or three cornered hats bound with silver lace. Black silk cockade with silver loop and regimental button. Scarlet coat with the skirts worn unhooked and loose, dark yellow lapels and deep round cuffs of the same colour laced around with silver and with silver loops on the buttonholes. Silver shoulder knot on the right shoulder with an aiguillette type knot. Short white gloves. White waistcoats and breeches and long black or white gaiters with black garters. Crimson net sash worn over the right shoulder knotted on the left hip with long tasselled ends.

Regulation pattern straight bladed light infantry sword with silver wire bound grip and a silver hilt with knuckle bow guard and shells. Gold and crimson sword knot. The sword belt worn around the waist over the waistcoat and under the coat.

The grenadier officer probably carried a small cartridge box over the stomach worn on this belt. The grenadier officers carried fusils with wide leather slings.

### Sergeant

The same coat as the rank and file but in better scarlet cloth laced with silver loops on the lapels and in the skirts. The sergeant's sash was crimson with a yellow stripe and had fringed ends and was worn around the waist over the coat. The sergeants had red waistcoats and breeches and wore long black or white gaiters. They were armed with steel basket hilted swords and halberd type pole weapons.

### Corporals

Dressed as the grenadiers but with a white worsted knot in aiguillette fashion on the right shoulder.

The coats of the grenadiers had no wings. The cuffs had no slash or looping but were bound with regimental lace. The lace on the lapels and below, on the cuffs and binding the waistcoat was in regimental pattern, all other lace was white.



## Battalion or Centre companies

Were dressed in similar style but with the three cornered hats bound with white lace. Battalion company sergeants carried the halberd and their officers the spontoon, a light pole weapon with a pike head and cross bar. Officers' dress was probably not uniform at this period.

The mounted field officers were dressed the same as the company officers except that jacked boots were worn coming over the knees with buckled on spurs.

The sash was probably a mixture of crimson silk and gold thread with gold tassels.

The horse furniture comprised holster caps and housings. The former were hexagonal with a scalloped lower edge and the housings were made of rectangular shape and passed under the saddlery showing under the base of the holster caps. Unfortunately no trace has been found of the precise design of the officers' horse furniture of the 15th Foot. However, it does seem reasonable to assume they would have followed the same pattern as displayed on the officers' grenadier caps and would therefore have been dark yellow with a wide silver edging and with embroidered Royal Crowns with the Royal Arms beneath.

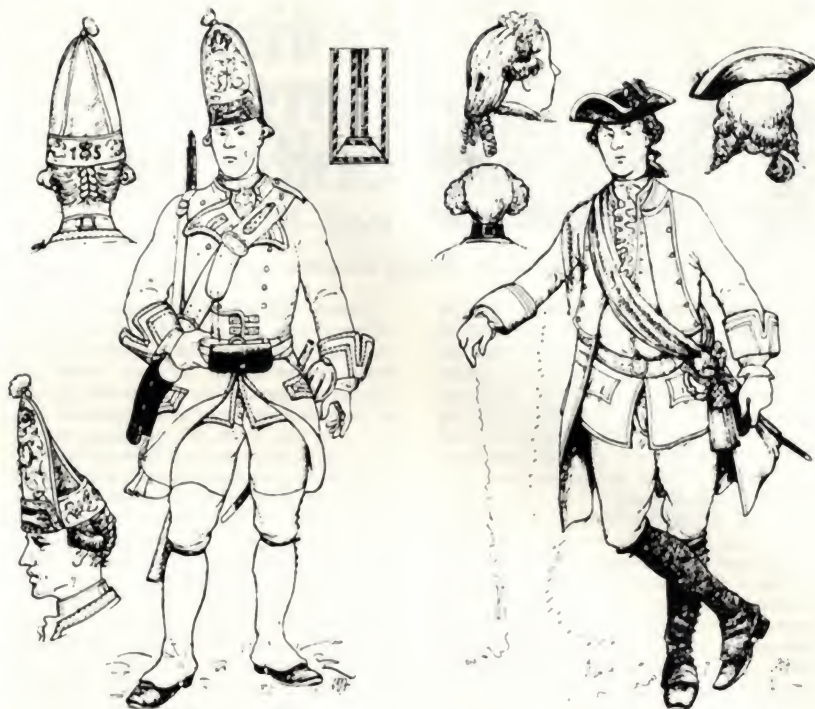
Details of the colours of this period are also not known. It is known that they would have been 6 feet 6 inches on the fly and 6 feet in depth. Two colours were carried, one, the King's Colour or First Colour of the regiment, would have been the Great Union (less the cross of St Patrick at this early period).

In the centre was the numerical distinction of the regiment in gold (usually painted) Roman numerals 'XV' with an abbreviated form of the word regiment usually shown as 'REGT.' all surrounded by a rosette wreath of the Rose of England and the Thistle of Scotland on one stalk in proper colours.

The second colour was known as the Regimental Colour and was simply the colour of the facings of the regiment with a smaller version of the union in the upper canton next to the pike. The centre of the field of the colour was decorated with a similar decoration to that on the King's Colour.

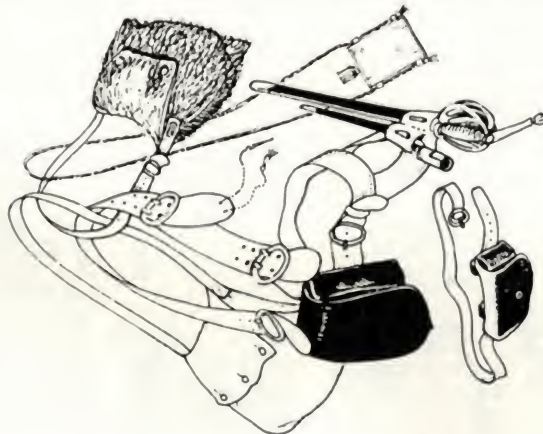
The colours were carried on pikes 9 feet 10 inches long from the pikehead to the ferrule and there were gold and crimson cords and tassels knotted beneath the metal head. The colours were carried by the Ensigns, usually youths of very tender years. It is stated that two colours were carried. Certainly this agrees with the 1768 Clothing Warrant which details very precisely what the regulations were but it is likely that the older fashion of carrying three colours may have lingered until the new Warrant was published, at least in some regiments.

The Drums and Fifes of the regiment would have worn reversed clothing, that is to say dark yellow coats, with red lapels, cuffs and linings and red breeches and waistcoats all liberally embellished with the pretty regimental lace and worn with a version of the grenadier cap, although firm details are not known. □



A grenadier with his coat buttoned across the chest (after Morier). Inset top left, the back of the cap. Top right, the regimental lace in detail. Bottom left, the way the cap was set on the head according to Morier's paintings. Points to note are the way in which the hair is plaited and tucked up under the cap and the small stock buckle showing at the back of the shirt neckband.

A Battalion company officer with, inset, some wig styles of the period. Any of these could be worn by officers. Right is a 'campaign' wig, worn on the march, possibly by older officers as it dates from the earlier period. Top left a 'major' wig, very popular during the 1750-1760 period. Bottom left, a 'cut' wig, bushy at the sides but cropped at the back to resemble natural hair, showing the stock buckle.



A collection of equipment that would have been worn by an infantryman on the march. A grey canvas haversack, a cowhide knapsack, large pouch, on the tang end of the shoulder strap, a picker and brush. Waistbelt with hanger and bayonet, white metal waterbottle (commonly suspended on cord but could possibly have a leather strap). A small leather cartridge box carried on the front of the waistbelt by grenadiers.

# NEW kits and models

## Grant and Lee

A LONG-STANDING omission in the list of large scale tank kits has been the Grant, and Monogram have now rectified this with a 1:32 scale kit; they have taken advantage of the similarity between the Lee and Grant to issue at the same time a kit of the former.

The two kits share a common hull and suspension, whose detailing is very good; the fit around the transmission covers is, however, poor. There is a glaring and fundamental error in the track: the end connectors and track horns should be positioned across the join between adjacent links, but on the model's tracks they are aligned with the track links. The problem is highlighted on the box cover, which displays a large photograph of a finished model instead of the usual painting: the misplaced horns and end connectors are picked out in a lurid rusty red. Moreover, the tracks are of a pattern far more common on Shermans than Grants or Lees, and short of major surgery there is little that can be done to rectify the situation.

The turret of the Lee is accurately reproduced, but a trough must be added within the turret under the gun mounting. The more complex shape of the Grant turret is less satisfactorily reproduced: the turret top should be much flatter at the rear, with the undersurface inclining more steeply upwards.

Assembly of these kits is straightforward, and with each kit comes a separate and very informative article on the construction of a diorama around the models. The price of £2.35 is reasonable for these large kits, but considerable work is needed to produce accurate models.

It is unfortunate that kits are still being introduced in 1:32 scale. 1:35 kits far outnumber 1:32 scale kits, and the difference in scale is very real. The Grant and Lee look decidedly bulky beside comparable models in the former scale.

On the other hand, now that Airfix have announced the first of their tank kits in this scale (a Crusader III), perhaps a new trend will begin. Certainly 1:32 has for donkey's years been the traditional model soldier scale, and there are hundreds of 54 mm/1:32 scale figures around to accompany these vehicles.

## F-15 Eagle

THE EAGLE WAS undoubtedly a star of Farnborough '74, so it is not surprising to find great modelling interest in this fascinating aircraft.

The 1:72 scale F-15 kits from Monogram and Revell, the subject of this review, are

unusual in that they are same scale, same basic construction breakdowns and same size! Many parts could be interchanged between kits and the result would be hard to detect. Somewhere in their genesis is the same scale drawing! However, there are one or two noticeable differences, not the least being price — Revell 93p, Monogram £1.75. What do you get for your money? — very much what you pay for.

Both kits are slightly under on fuselage length, and the Revell model is 0.8% under on span — and on published information, correct for outlines and cross-section. Constructionwise, both kits break-down in the same fashion.

Due to the high-wing configuration of the F-15A, the natural moulding break is on the undersurface of the wing and the entire upper wing/upper fuselage surface is moulded as one — excluding the forward fuselage.

The lower fuselage bath is a single unit, and the forward fuselage is split vertically to allow installation of the cockpit detail and nose gear. Monogram have made the forward section of the air intakes a separate part, easier to assemble than the Revell system of splitting the intakes horizontally. This results in a very difficult joint.

Landing gear detail is much finer on the

Monogram model, as is the cockpit detail, and a panel transfer is included with this kit. Revell have included the removeable engine and compressor face of the other motor. This detail is visible through the air intakes, as are the huge wheel bay boxes that almost totally obscure this detail.

Monogram provide the intake ramps and intake blanks, a much better system than the Revell one, neatly and correctly blocking off the view of a cavernous fuselage interior. Mind, they have omitted the jet pipe blanks.

On both models the canopy jack is too far forward, it should be right at the rear of the equipment bay.

Both kits include AIM-7F Sparrow missiles, but Monogram include Sidewinder AIM-9Es on underwing pylons, and the 600 US Gallon centreline tank. Also in this kit is the nose-mounted radar — APG-63 by Hughes, together with cockpit entry ladder and the crew chief figure to stand on it.

Both kits fall far short of perfection with the finishing instructions. The overall colour for the F-15 is a light blue shade 'Air Superiority Blue'. Monogram mould in light blue plastic and mention the 'Air Superiority Blue' on the instruction sheet, but Revell make no mention whatsoever of the overall finish colour — not a good omission as they mould in light grey plastic — buck up, Mr Revell!

As I remember the aircraft at Farnborough, Humbrol Gloss No 47 'Sea blue' followed by matt clear varnish is very close to the actual shade of light blue required.

Revell supply excellent transfers for the 9th prototype aircraft, but Monogram would appear to have dropped a clanger here.

Monogram's 1:32 scale Lee tank.





Their markings are for an aircraft coded 1A, and serialised AF-74-015 — a combination of the aircraft designation and year of entry into service. Looks like a publicity serial to this reviewer.

TAC's 555th Tactical Fighter Squadron 'Triple Nickel' is just bringing the F-15A into USAF service — an authentic serial for this unit would be better. Nice touch is Monogram's diorama hints for the F-15A model, very welcome is this.

To sum up — both models have potential, but I think it is more easily realised with the Monogram kit than the Revell one.

### Fujimi Hannomag

IT'S BEEN A long wait for a kit of the SdKfz 251 in the popular wargames scale and now Fujimi have filled the bill. Very nicely too, with a kit containing optional parts for the 251/1 or the 251/10.

The kit fits together well although the location of some of the parts is rather vague and it will pay to have a Bellona Print Series 2 to hand for additional details like starting handle, mirrors, rear door hinges, etc.

The road wheels, each of which has eight holes which need drilling out, are a time consuming chore.

The Pak 36 of the 250/10 version was used for a 'quickie' conversion on an Airfix Bren Carrier to make a 3.7 cm Pak and Fahrgestell Bren(e). The 251/1 is shown as made direct from the kit and unpainted as it is to be further modified to another variant. As there are some 22 variants this Fujimi kit should prove very popular. Kit supplied by Ren-Models, Cambridge, and costs 60p.

### Esci Hannomag

BY COINCIDENCE the Italian firm of Esci have also available an SdKfz 251, but this time to the scale of 1:72. Unfortunately this kit sports a rash of rivet detail, most of which will need removing. It also has the Ausf D type, flat plate, nose. The internal detail is not too good with the seats too small — roadwheels are undersize and the track chains lack inside detail, the teeth being particularly absent.

General fit of parts is acceptable, instruction leaflet clear as far as construction goes but inadequate for colouring details, in particular which transfers relate to which colour scheme as shown on the box art.

### Fujimi SdKfz 222

LOOKING THROUGH the manufacturers' lists of kits in any scale you could almost cover the number of armoured cars on the fingers of one hand. The SdKfz 222 by Fujimi must be a welcome arrival on the scene.

It is up to the usual standard for this firm with clear instruction sheet and good fit of parts. Having said that we must also add there is some vagueness of the exact location in some instances but reference to the kit artwork and photographs should sort any doubts out.

Least convincing part of the model is the wire-covered frames over the turret top which would be better replaced by scratch-built items using a stretched sprue frame and some nylon mesh.

The kit includes three figures and a sentry



Top Fujimi 1:76 scale Hannomag. Above Esci 1:72 scale Hannomag. Below Fujimi SdKfz 222 and sentry box.



box. The photograph shows the model unpainted as this is going to be used for conversion to another variant. Kit from Ren-Models, Cambridge, price 60p.

### Revell MiG 21

REVELL ARE gradually building a reputation in the 1:32 scale field and their MiG 21 has been eagerly awaited by devotees of this size of model. The wait has been worthwhile for this is — in our opinion — the best yet from this company.

The kit is cleanly moulded and has delicate surface detail with well detailed wheel wells, cockpit and speed brake interior. There are optional parts for the builder to construct a

PF or PFM version of this popular Soviet aircraft, and the now expected removal engine is present.

Many serious modellers tend to dismiss the addition of optional positions for the speed brakes, the removable rear fuselage, and other similar gimmicks, as purely for the kids, but they should remember that without juniors' pocket money many of the kits now available would not have seen the light of day. Apart from this, there are those who like to build dioramas and such components as those mentioned are a boon to this type of model maker.

Continued on page 440

# MODELTOYS

## PLASTIC KIT SPECIALISTS—ASSOCIATE MEMBER I.P.M.S.

ESCI AFV KITS			CONTRAIL (SUTCLIFFE) VACFORMS A.C.		
PzKpfw 111	1/72	55p	Manchester Conv	1/72	62p
Sd. Kfz. 251 Hanomag	1/72	55p	Waco CG13A	1/72	68p
PzKpfw 11	1/72	55p	Avro York Conv.	1/72	68p
Wespe	1/72	55p	Airspeed Horsa	1/72	81p
Hummel	1/72	55p	Waco CG4	1/72	81p
Hetzer	1/72	55p	H.P. Harrow	1/72	£1.00
Marder III	1/72	55p	Overstand/Sidestrand	1/72	£1.00

HASEGAWA AFV KITS			AIR CONVERSIONS		
1. Willys Jeep	1/72	40p	Hunter T.7 kit	1/72	50p
2. 155 mm. M.2 Gun	1/72	40p	Harrier T.2 Kit	1/72	55p
3. Stuart Mk. I	1/72	40p			
4. M3 Lee Mk. I	1/72	40p			
5. M3 Grant Mk. I	1/72	40p			
6. M3A1 H.Track	1/72	40p			
7. M4A1 H.Track	1/72	40p			
8. Tiger I.E.	1/72	40p			
9. Panther G.	1/72	40p			
10. 88 mm. Flak 18.	1/72	40p			
11. Sd. Kfz. 7 H.Track	1/72	40p			
12. Kubelwagon and BMW Combination	1/72	40p			
13. Schwimmwagen and Kettenkrad	1/72	40p			
14. Sd. Kfz. 7/1 with 4AA	1/72	40p			
15. M-4 (A3B) Sherman	1/72	40p			
16. TX-40 Fuel Truck	1/72	40p			
17. Toyota Starter Truck	1/72	40p			
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## MODELDECAL DECALS

1/72 SCALE

All listed sets available:  
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2: F-4 Phantom (VFMA-531, USMC; 497th TFS, USAF and 767 Sqn., RN.).  
3: N.A. F-100D Super Sabre (four alternatives in USAF service).  
6: U.S. Navy (F4U-1A Corsair, VF-17; SB2C-3 Helldiver, VB-7; OS2U-3 Kingfisher, Phantom, VF-111).  
7: RAF Hunter F.6, 14 Sqn.; Phantom FGR2, 6 Sqn.; Meteor F.4, 63 Sqn., and Harrier GR.1, 1 Sqn.

10: USAF-S.E. Asia (RF-101C, F-105D, A-1H and EC-47N).  
11: F-102A, 460th FIS, USAF; Harrier GR.1, 4 or 20 Sqn. RAF, Sabre 6, 430, Sqn RCAF and alternative RCAF Sabre fin emblems.

12: Phantom FGR.2, 17 Sqn., RAF; F-104G, Belgian A.F. and USAF TAC Badges.  
15: USMC AV-8A Harrier, VMA-513, US Navy A-7E Corsair, VA-113 and F-4B Phantom, VF-111.

16: USAF-S.E. Asia (2): F-4E Phantom, 34TFS, 288TFW, Cessna 0-2A 23 TASS, AC-47 432TRV, and USMC OV-10A Bronco, HLM-267.

17: T-33, RCAF; F-35 Draken, 725 Sqn., Danish Air Force; Mosquito FB.VI, 4 Sqn. RAF, Skyhawk, 805 Sqn., RAN, and A-4K squadron markings for 75 Sqn., RNZAF.

18: Royal Navy—Post War: (Gannet F.COD, Sea Hawk F.1., 898 Sqn., Wessex Mk. I, Ark Royal, and Avenger 6, 831 Sqn.).

19: West German Air Force and Navy (RF-4E Phantom, AG51 or 52); F-84F Thunderstreak, Jabo 33; RF-84F Thunderflash, AG51; Sea King Mk. 41.

20: H.S. Buccaneer S.2's, 800 and 809 Sqn., F.A.A.; NF-5A Freedom Fighter, 314 or 315 Sqn., Dutch Air Force, and L-20A Beaver, 334 Sqn., Dutch Air Force.

21: A-4E Skyhawks VMA-311 VA-94, A-4F Skyhawk, VA-164, AD-4 Skyraider, VA-65.  
22: A-7D Corsairs, 356 TFS, 354 TFW, and 40 TFS, 355 TFW, with alternative decals for 357 TFS, 355 TFW, T-33A, 50 TFW, and F-86A Sabre, 116 FIS.

23: Phantom F.G.1, 43 Sqn. Harrier G.R.IA, 3 Sqn. Lightning F.2A, 92 Sqn. All RAF CF104 Starfighter 421 Sqn. C.A.F.

24: RAF Hunter F.6, 79 Sqn. Phantom F.G.R.2 41 Sqn. Sea Venom F.A.W.21 809 Sqn. Sea Venom F.A.W. 21 890 Sqn. F.A.A. Wyvern S.4, 831 Sqn. F.A.A.

25: Lightning F.2A, 19 Sqn. Canberra B.11B 16 Sqn. Harvard T.2B, 500 Sqn. Hunter FGA.9, 45 Sqn. All RAF.

26: Buccaneer S2B, 15 Sqn. Hunter FGA.9, 58 Sqn. Canberra B.2 10 Sqn. Gazelle H3T C.F.S. All RAF. R.N. Gazelle HT2.

'MODELDECAL' style fully illustrated instruction sheet, giving decal locations and full colour scheme details, is included with all Modeldecals, and commencing with set No. 17, a selection of photographs is also included.

PRICES	SET No. 6	28p	Postage on all decals:
50p	SETS 25, 26	50p EACH	up to 2 sheets 10p, 3 and
ALL OTHER SETS		38p EACH	over 12p UK.



## Continued from page 438

The cockpit detail is extremely well done but how much of this is guesswork on the part of the Revell designers must remain their secret. The canopy is clear and can easily be converted to the side-hinged version as fitted to some PFMs.

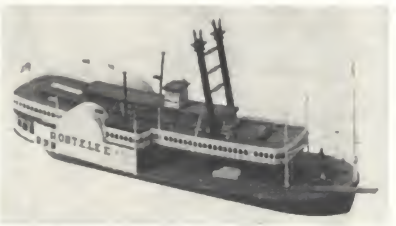
Some of the surface detail may also be inspired guesswork, for comparison with photographs reveals some slight variations, examples being the moulded ridges at the rear fuselage, and two raised mouldings near the fuselage joint line.

The model can, with a little work, be made into a MiG 21FL as used by the Indian Air Force and this would enable a camouflage finish to be applied. Markings are included for a Russian or North Vietnamese machine and are generally acceptable although the Russian star should have a thin red outline to the white border.

The model looks right and has the general MiG 21 'air' about it, so, bearing in mind the fairly limited information available — when compared with Western types — Revell have done a good job and the kit can be thoroughly recommended.

### Robert E. Lee

A RECENT re-release by Revell was their Mississippi steam paddle boat *Robert E. Lee*, a replica of the boat which originally won fame by racing and beating the *Natchez* between New Orleans and Vicksburg. The kit, which has apparently been produced to fit a box size rather than a particular scale, is 15 inches long when completed. Price is £13.55.



### Tug boat

ANOTHER RE-RELEASE in the ship line from Revell is their harbour tug, which can be built to represent one of two vessels operated by the Gowanus Towing Company of New York, *Gowanus* or *Taurus*. Once again, precise scale is difficult to determine, a common fault with many older American-designed kits, and price is 95p.



## news for the wargamer

### Battle of Britain

WITHOUT A shadow of doubt, the Battle of Britain ranks as one of the most significant battles of the Second World War, and this new board game from Simulations Publications UK will be welcomed by all wargamers who have been fascinated by the many 'what ifs' of this campaign.

Attractively produced in the now-standard vacu-formed plastic packaging with little containers for the die-cut playing counters, the game includes a square-gridded playing map mounted on stiff card which takes in most of England and the French coast. Airfields and British target cities are clearly marked, as is the line indicating the maximum range of Britain's radar defences.

Purists will object that the game designers have deviated from historical fact in making the German objectives British factories producing aircraft and aircraft components, rather than British airfields and aircraft, but in practice the effect is the same.

All the facets of aerial warfare are included: strategic bombing, low-level and dive-bombing, strafing, fighter interception, 'dog-fights', heavy and light anti-aircraft fire and barrage balloons. In addition, at the end of each week (one game Move) one third of each player's aircraft must remain on the ground for maintenance (both players receive reinforcements, however).

All the playing pieces, representing groups of different types of aircraft, are moved face downward until intercepted. Since a playing piece may represent any number of aircraft from one upwards, this gives scope for diversionary attacks. However, the German player is forced to reveal the strength of his units to within ten per cent of their actual value once they come within radar range. (A useful factor which wargamers could include in the game would be to mark the positions of radar stations round the British coast. The Germans could then try to knock some of these out, thus creating 'blind spots' through which they could funnel their attacks.)

A nice touch which is rarely seen in board wargames is the provision for 'veterans' — ie experienced pilots with combat missions to their credit as opposed to novices. Aircraft which fight and survive one week of combat become classified as veterans and subsequently add one to each combat die throw.

Fuel is an important factor in this game, especially for the German escort fighters which lacked the range to stay with their bombers beyond a limited period.

One obvious problem which the game designers have neatly circumvented is that of fighting a three-dimensional battle on a two-dimensional surface. All aircraft are at low altitude when they take-off and may climb to high altitude by expending movement points. Aircraft at one level may not attack aircraft at a different level. Similarly, while both light and heavy anti-aircraft guns may engage low-level targets, only heavy AA can engage high-flying machines.

Overall, this is a fascinating game which may well appeal to the aviation enthusiast and modeller who has never tried wargaming as well as to established players. It is available from Simulations Publications UK, Freepost, Altrincham, Cheshire WA15 6BR price £5.60 (existing subscribers get normal discount).

### Star Force

THIS IS A new science-fiction board game from Simulations Publications which attempts to re-create interstellar warfare in the far future. Generally it is a good game, though not inspiring. The game's most novel features are three-dimensionality, making the total playing area somewhat greater than *Strategy One*, and 'instantaneous' travel by telekinesis, cutting out much of the tedium of simultaneous movement.

The rules are clear, complete and not unnecessarily long — unlike much of SPI's other work. Relatively little time is spent 'referring back' in play, partly because charts and rules are easily found, but also beneath both basic and advanced games are to an extent self-explanatory. The designer's notes read like a sci-fi novel!

The complexity therefore lies not in details but in the game itself, notably in the use of a tactical display alongside the main star map, for advanced combat. In this way tactical and strategic manoeuvre are combined without sacrifice to either. The tactical display is cumbersome to use initially, but after a few games this passes — although some skilful alteration of the rules might by no means be a bad thing.

With 15 scenarios, including one solitaire, two triads and a marathon of two major scenarios linked together, the choice is considerable. It takes little imagination to create new situations — not having to assuage 'historical authenticity' has kept options open in that respect just as it has kept the rules down.

The worst feature is the solitaire scenario, which reads and plays like an (unfortunate) afterthought; but for wargaming hermits the advice on how to turn the game into a

one-man, non-simultaneous movement affair is thoroughly welcome. Overall, at £3.99 'Star Force' deserves to be successful, and with the ever-growing number of wargaming sci-fi fans, it probably will be.

**Practical Wargaming**, by C. F. Wesenecraft. The Elmfield Press, Elmfield Road, Morley, Leeds. Price £3.80.

ONE COULD say that this is 'yet another' wargames book aimed at the complete beginner along the lines which well-known authors such as Don Featherstone, Charles Grant and Terry Wise have already covered, but this would be rather unfair on Mr Wesenecraft who has done an excellent job in presenting all the basic information in a very clear and understandable form.

The book begins by describing elementary wargame requirements such as terrain, then goes on to consider each of the main wargaming periods in chronological order. Under each heading — for example, ancient, medieval, pike and musket, eighteenth century, Napoleonic, American Civil War and Franco-Prussian War — Mr Wesenecraft gives details of wargames army organisation, movement, morale, meleeing and firepower.

One of the most attractive features of the book are the very large number of diagrams showing unit organisation using wargame figures, and illustrating typical tactics of each period, formation changes, etc.

The book is clearly and concisely written in a form which is extremely easy to follow, while the playing rules will be readily comprehensible to the youngest would-be wargamer. And even though experienced players will probably find the rules too simplified for their liking, there will be much else in this book to interest them. In particular, Mr Wesenecraft devotes a great deal of attention to describing the construction of a variety of models and scenic accessories which will add realism to any game.

Throughout, the emphasis, as the title suggests, is on *practical* wargaming, making this book perhaps the best primer on the subject so far published.

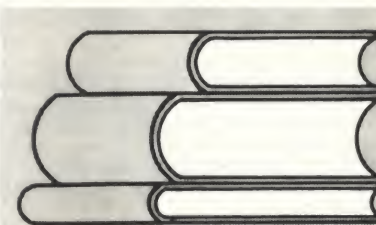
### Moves

'MOVES' IS THE complementary magazine to S&T, containing discussion, addenda and errata to existing SPI games, and additional play scenarios. The two latest issues received, Nos 15 and 16, contain major game profiles on 'Sinai' and 'World War 2' respectively, and will be interesting to anyone who has already purchased either of these games.

No 15 also contains discussion of a projected SPI game ominously called 'World War 3' and an interesting list of wargames magazines (primarily American — *Wargamers' Newsletter* is not even mentioned!) No 16 contains an interview with a US Defense (sic) Department official about modern strategy which makes fascinating reading, as well as articles on play balance in the game 'Musket & Pike' and various other minor features.

Moves is available from Simulations Publications UK for 85p per issue or £3.60 for a year's subscription (six copies).

March 1975



## books for modellers

### Aviation

**Spitfire at war**, by Alfred Price. Ian Allan Ltd, Terminal House, Shepperton, Middx. Price £4.50.

OF ALL THE aircraft ever built, the Spitfire is the one which will remain in popular memory for ever. Without a shadow of doubt it is one of, if not *the* most beautiful aircraft ever built, and it is certainly the world's most popular subject with kit manufacturers and modellers! As such, Alf Price's new book is practically guaranteed to be successful without any further words from us, but a short appraisal is in order.

Containing 160 large-format pages which are very well illustrated with hundreds of photographs of the Spit in action, the book includes chapters on every aspect of its wartime career, going right up to post-war operations in Malaya. The Battle of Britain, action over Europe and in the Far East, PR duties and naval operations in the Seafire configuration are all covered, and the book is full of pilots' reminiscences, accounts of dog-fights, ground-attack ops and other actions.

The Spitfire's development story from prototype through the many different marks of machine is also well recounted, making this book one which no aviation enthusiast should miss at any price . . .

**Aircraft Museums Directory**, compiled by Gordon Riley. Battle of Britain Prints International Ltd, 3 New Plaistow Road, Stratford, London E15. Price 50p.

THIS HANDY little guide book is virtually a potted version of Leslie Hunt's section on British museums in his definitive *Veteran & Vintage* directory. It lists each aviation museum in the UK which is open to the public, gives their addresses and the addresses to contact in those cases where prior permission is required, the admission charge (where applicable), opening times, and a list of the aircraft in each museum at the time of writing. Several of the aircraft are illustrated, making this booklet exceptional value for only 50p.

**2 Group, RAF. A Complete History, 1936-1945**, by Michael J. F. Bowyer. Faber and Faber, 3 Queen Square, London WC1. Price £8.75.

WITHOUT QUESTION this new book from Mike Bowyer must rank as one of the most detailed and definitive unit histories concerned with the Second World War yet written.

No 2 Group was formed in Bomber Command to support the army. After equipping with Blenheims, it specialised in daylight

operations, and after participating in the Norwegian campaign, was thrown into the battle to save France. Later, and not until heavy losses had been incurred, it was despatched on an anti-shipping campaign to Malta. Night intruder operations were made against enemy airfields, and 2 Group fighter-escorted attacks on Nazi-occupied territory continued until the D-Day landings, when support to the invasion was subsequently given with considerable success. The Group mounted several spectacular operations, particularly when using Mosquitoes.

Michael Bowyer is well qualified to write 2 Group's momentous story, for he visited its squadrons on many occasions during the war, and has subsequently interviewed many of the men who flew with it. Using these interviews in conjunction with official records, he has pieced together a complete, day-by-day account of the Group's activities during the war, and has included every sortie flown.

Finally, there are pages of incredibly detailed appendices which show the serial numbers of all 2 Group's aircraft during the war, sorties flown, squadrons and units forming part of the Group and aircraft on strength at various times.

Unfortunately, the book is of little practical value for modellers, but every serious aviation historian and enthusiast should certainly acquire a copy.

**Historical Aviation Album, Collector's Series, Vol XIII**, by Paul R. Matt. Available outside America from W. E. Hersant Ltd, 228 Archway Road, Highgate, London N6. Price £3.25.

ANOTHER WELCOME offering from HAA, this volume includes descriptions, large, clear photos and scale plans on Benny Howard and his DGA racing aircraft, the WACO UMF and YMF series of sports biplanes, the General Aviation-Clark GA-43 passenger transport of the 1930s, a brief history of North American Aviation and a very detailed study of the famous NAA O-47. For modellers, the book is worth buying to get this last item alone, since it includes detail and constructional photographs as well as a 'chronology' identifying each of the sub-types and large, very clear and detailed, four-view scale drawings. A beautiful production which deserves to sell well.

**Fifth Air Force Story**, by Kenn C. Rust. Available from W. E. Hersant Ltd, 228 Archway Road, Highgate, London N6. Price £3.

OF ALL HISTORICAL Aviation Album's recent publications, this is the one most likely to appeal to aircraft modellers. The US Fifth



Air Force operated a wide variety of different and colourful types in their operations over the Pacific during the last war, and all are included here.

The book begins with a long chapter on the Fifth's history and operations during the war, and includes an invaluable chart showing the fighter, bomber, reconnaissance and transport groups within its overall command, including the dates each became attached.

This is followed by a modeller's dream of a section outlining Fifth Air Force markings, which includes close-up photos of the many colourful insignia carried by its Airacobras, Lightnings, Mustangs, Thunderbolts, B-17s, B-24s, B-25s and other aircraft as well as colour-coded line drawings. Highly recommended!

## Military

**Anti-Tank Weapons**, by Peter Chamberlain and Terry Gander. Macdonald and Jane's, 49/50 Poland Street, London W1. Price £1.20.

THE FIRST in a new series of 'WW2 Fact Files' from this publisher, *Anti-Tank Weapons* is an attractively produced, interesting and informative guide to the anti-tank weapons of the combatant powers during the last war. Because of its size (64 pages) and the vast amount of ground to be covered, the book deals only with those weapons which were designed specifically as anti-tank weapons, to the exclusion of the many types which were adapted. Thus, for example, there is coverage of the German 8.8 cm Pak 43 L/71 and Pak 43/41 L/71, but no details on the earlier 8.8 cm Flak guns which were used in the anti-tank role.

The book is attractively designed with many large, clear photographs of inestimable value to modellers and wargamers, and includes a short piece of descriptive text on each gun plus a data table.

**Machine Guns**, by Peter Chamberlain and Terry Gander. Macdonald & Jane's, 49/50 Poland Street, London W1. Price £1.20.

THE SECOND M&J 'WW2 Fact File' from Peter Chamberlain and Terry Gander covers the light, medium and heavy machine-guns used during the last war. Like *Anti-Tank Weapons* it is divided alphabetically under nationalities, and includes short sections of descriptive text, data tables and many large, clear photographs. Although of less use to modellers than the first title, this book will be of interest to all military students and wargamers specialising in this period.

**A Concise Encyclopaedia of the Second World War**, by Alan Reid. Osprey Publishing Ltd, 137 Southampton Street, Reading, Berks. Price £3.95.

AT LONG LAST someone has come up with a concise but definitive 'potted' encyclopaedia to the momentous years 1939-45. A book of this type has been badly needed by students and historians for a long time, since it allows one to find the answers to questions of fact along 'when', 'where', 'who' and 'what' lines readily without recourse to hunting through half a dozen reference sources.

Alan Reid's book is divided into five sections. The first is a month-by-month chronology of the significant events throughout the world during this period. The second is a detailed description of the origins and courses of ten of the most significant campaigns of the war, ranging from the invasion of Russia and the Battle of the Atlantic to the Allied bomber offensive and the final defeat of Japan.

The third section is a 'who's who' to more than 300 principal people who, as general, politician or scientist, helped affect the course of the war in some significant fashion.

Section four is a brief outline to the armies, air forces and navies of the major combatant powers, which includes short details on the most significant weapons employed by each.

Finally, there is an interesting section on 'the civilian experience' which covers primarily the type of horrors suffered by the Jews and conquered nationalities under Nazi rule.

As a quick, handy reference to have to hand on the bookshelf when you 'just can't remember' this book cannot be recommended too highly, although any reader expecting any great depth of detail will be disappointed.

**The Observer's Army Vehicles Directory**, edited by Bart H. Vanderveen. Olyslager Organisation, Frederick Warne & Co Ltd, 40 Bedford Square, London WC1. Price £4.50.

THIS BOOK completes the 'Observer's' trio covering the army vehicles of the world from the earliest days of motoring up to the present day. It deals with the military transport of all nationalities during the First World War and inter-war period up to the beginning of the Second World War, where the story is taken up by the previously published *Observer's Fighting Vehicles Directory — World War II*.

This latest volume is crammed full of rare and fascinating photographs, technical specifications and historical notes, making it a superb reference source for all modellers and wargamers. (Readers of *Airfix Magazine Annual 4* will be interested to know that this book has also at last enabled us to identify the unnamed lorry shown on page 58 as a Thornycroft 3-ton anti-aircraft truck.)

The book is divided into nationalities in alphabetical order, with sub-sections under each nationality covering, for example, motorcycles, tractors, trucks of various weights, half-tracks and armoured vehicles (excluding tanks). The vast scope of the subject matter has made this book nearly 400 pages in length, and Bart Vanderveen is to be congratulated on having assembled such a wide variety of, in most cases, very clear photographs of the vehicles.

Modellers whose interest does not normally extend back prior to 1939 should certainly consider purchasing a copy in any case, since a large number of the vehicles described and illustrated were in wide use during the Second World War even though designed and manufactured prior to its outbreak.

**The Funnies**, by Geoffrey W. Futter. Model & Allied Publications Ltd, 13/35 Bridge Street, Hemel Hempstead, Herts. Price £2.75.

READERS OF *Military Modelling* will be well aware of the quality of Geoffrey Futter's work, and in fact this book is largely based on the series of articles he wrote for that magazine a couple of years ago. It covers the formation, history, badges and vehicles of Sir Percy Hobart's 79th Armoured Division during the last war, and is particularly useful to modellers in that it includes meticulous 1:76 scale drawings of each vehicle described.

Although the text appears to have been altered little since its first appearance, most of the photographs seem new so even readers who possess the original series of articles will find this book of interest.

Types covered in detail include the Churchill AVRE, Ark and Crocodile, Sherman Crab and DD, Grant CDL, Ram Kangaroo, Buffalo LVT and many others, and since the 'Funnies' are such an ideal subject for a 'theme' collection of AFV models, this book deserves a popular reception and should find a place on any military modeller's shelves.

## Naval

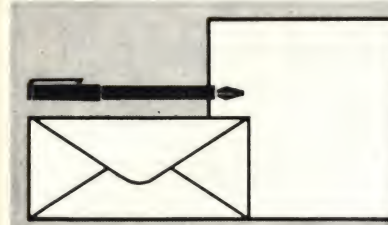
**British Escort Ships**, by H. T. Lenton. Macdonald and Jane's, 49/50 Poland Street, London W1. Price £1.20.

THE FIRST naval title in M&J's 'WW2 Fact File' series, Mr Lenton's book describes and illustrates the vital anti-submarine escort ships which kept Britain's trade links open during the last war. Types covered include the 'Bittern', 'Egret', 'Black Swan', 'Captain' and, of course, 'Flower', 'River', 'Loch' and 'Castle' Classes. Brief descriptions of each Class are followed by lists of the ships within them, their pennant numbers, launch dates, builders and eventual fates, together with a fairly large number of photographs.

Unfortunately, the format chosen for this series of books as a whole, which works well in the two above titles on machine-guns and anti-tank weapons, has resulted in considerable space wastage here, with a good third of many pages being completely blank. Nevertheless, this is an interesting and useful addition to the literature on warships of the Second World War.

**American Gunboats and Minesweepers**, by H. T. Lenton. Macdonald and Jane's, 49/50 Poland Street, London W1. Price £1.20.

SECOND OF Mr Lenton's 'WW2 Fact File' titles, this lists all the auxiliary escort vessels of the US Navy during the last war, and includes a number of especially interesting photographs. Types covered include converted fishing vessels, ex-English corvettes and Henry Ford's well-known 'Eagle' boats of First World War vintage. The basic format is the same as for *British Escort Ships* but more of the photographs in this title have been printed larger, resulting in less wasted space.



## letters to the editor

### Contributions

Letters to the editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit, and the publication of photographs from readers is similarly rewarded. Airfix Products Ltd award the kits on the following scale:

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Letters to the editor should be addressed to: the Editor, *Airfix Magazine*, Bar Hill, Cambridge, CB3 8EL. If a reply is wanted, a stamped addressed envelope (or International Reply Coupon) should be enclosed. All photographs submitted for consideration should be clearly labelled with the sender's name and address on the back of each.

Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

### Finnish Storch

IT WOULD SEEM that the oleos on the photo of the model of the FS 156 Storch in Christine Wood's article are too long in comparison with the photo of the real aircraft at the foot of the page and the drawings.

Can any of your readers throw any light on the markings of the P-51 Mustang flown by Group Captain Leonard Cheshire when marking targets during daylight in 1944? **Douggle Wotton, 19 Bassett Crescent West, Bassett, Southampton, Hants.**

IN HER ARTICLE on Finnish Storchs and Lysanders in the January issue, Christine

Wood mentions some improvements to the basic Airfix Storch kit, but these do not cover the major errors.

The undercarriage is probably the most difficult part of the aircraft to portray correctly, but it is essential to assemble it correctly to achieve the character of the Storch. Unfortunately, the telescoped and extended main undercarriage legs supplied in the kit are both too long.

This can be rectified by removing a section 3-4 mm long from each leg to be used at a point immediately below the change in width of the leg fairing, and rejoining the legs with liquid cement. The spindly appearance of the aircraft only occurred when it was in the air, and the photograph with the article shows the correct 'sit' of the aircraft on the ground. Incidentally, another possible point of confusion in the article is the mention of undercarriage legs 47 and 48, which should read 46 and 47.

The other obvious omission in the Airfix Storch kit is the wing and undercarriage support struts *within* the canopy. This obviously has to be simplified in 1:72 scale and



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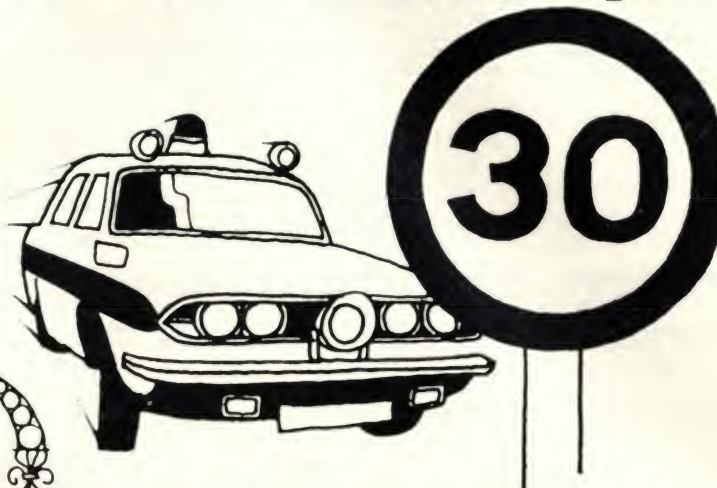

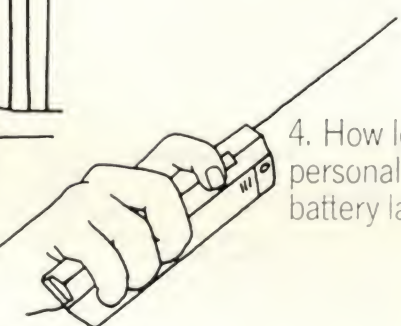


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3. The wearer, aged 16-18 is a cadet, training to be a policeman.  
4. Approximately 1 year—they are, of course, rechargeable.  
5. Yes, a number of police forces have underwater search units.

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